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ABSTRACT

This document is the first of four reports on the state of education professions published by the Commissioner of Education. This report discusses the issue of supply of and demand for education personnel in public elementary and secondary schools and in colleges and universities. The first chapter analyzes the alleged "Ph.D. glut" in postsecondary educational institutions. Chapter 2 is a case study of the qualitative need for teachers in 10 school districts of differing sizes and locations serving quite different communities. A regional analysis of the supply and demand for teachers in 1969 is presented in Chapter 3. The fourth chapter sets forth the Office of Education program priorities for 1973. Programs for the training of educational personnel under the Education Professions Development Act, 1969-71 are included in the appendix. (MJM)

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THE EDUCATION PROFESSIONS 1971-72

An annual report on the people who serve our schools and colleges—1971–72—as required by the Education Professions Development Act

Part I - The Need for Teachers in Our Schools and Colleges

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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SP 006 351

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Elliot L. Richardson, *Secretary*
Office of Education
S. P. Marland, Jr., *Commissioner*

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Foreword

The issue of the supply of and demand for education personnel is often oversimplified because of the need to gain a wide public understanding of what is essentially a complicated matter. For many years this country has had a severe teacher shortage. The number of people minimally qualified to be hired by school systems was fewer than the number of available positions. That simple statement, however, glosses over the complicated fact that the national shortage was an aggregate of a great variety of situations across the country: shortages have been very severe in certain kinds of school systems, in certain areas of the country, and in certain subject fields or supportive positions—and much less severe and even nonexistent in others.

When the national "shortage" ended, the number of people minimally qualified to be hired by the Nation's school systems was reported to be greater than the number of available positions. But much of the discussion has tended to create misunderstanding of the meaning of "shortage" and "surplus" and of "supply" and "demand." The fact of the matter is that national data have built-in limitations. Local education agencies report the number of individuals who are certified to teach, the number who actually seek teaching jobs, the number who have left teaching and who have returned to it, and the number who retire or die. We learn in this way about the continuing shortages of certain supportive staff and of classroom teachers in certain subject fields. But we do not learn of the severe "shortages" which persist for teachers who are black, Chicano, male, or bilingual. In addition, school systems, in the face of the alleged "surplus," continue to point out that while the applicants meet the minimum certification requirements of the State, they still do not meet their local standards—standards which are becoming higher and more demanding. The positions may be filled, but not always by the kind of people or the quality of people that the school systems have determined they need.

It is the question of need that complicates the matter further. When a local education agency reports its teacher "surplus" or "shortage," it indicates whether its budgeted positions have been filled or not. But that report may or may not reflect whether the staffing pattern of that school system is based on the true needs of its students and of the community it serves. While schools generally devote more and more of their resources to planning, the fact is few school systems make continuing, systematic, and comprehensive needs assessments which provide an accurate picture of the kind and number of staff required and which result in budgets that reflect those realities. The "state of the art" of needs assessment remains relatively unsophisticated, and so does our understanding of the true "surplus" or "shortage" of teachers.

These are important and necessary qualifications to national data on the teacher surplus. But the fact is that there is a national surplus, and if present trends continue it will increase substantially—to as much as a million new teachers by the midseventies. The argument that our teachers need higher quality education and can achieve it only if there are more teaching positions for higher qualified personnel is persuasive; but the fact is the schools are trying to find ways to use *existing* person-

nel within their present budget constraints. They are not establishing new positions but rearranging the staffing patterns they already have, while at the same time seeking highly qualified personnel among the multiple applicants for vacated positions.

In the meantime, the surplus continues to grow. The waste involved in continuing to prepare teachers for whom no jobs exist is of course intolerable. The first step toward correcting these education manpower imbalances is the development of a close collaboration between the colleges and universities which recruit and train teachers and the school systems which hire them. State education agencies will need to assume leadership in bringing about this collaboration and in developing action programs to minimize a costly and wasteful teacher surplus.

The issue of need for qualified personnel and of an actual impending surplus exists for postsecondary institutions as well. Here the situation is complicated by the great variety of institutions and by the wide differences in their goals and objectives and in the characteristics of the students they serve. As with the phrase "teacher surplus" when applied to elementary and secondary schools, the term "Ph.D. glut" at postsecondary institutions is barely descriptive and is, in fact, misleading. Overall, these institutions have not responded to the very real and widely varying needs of many students who attend them and of the far greater number who do not but would if programs were available which were responsive to their requirements.

The criterion for the hiring of college teachers is the Ph.D. or master of arts degree, and often these degrees and the education and scholarship they represent are suitable only for a certain kind of student. In this sense, the "Ph.D. glut" is real in that there are more teachers with these credentials than there are positions requiring that kind of preparation. So while this phrase may be useful in indicating that we have too many teachers trained in one way for one job at one kind of institution, it is not useful to the extent that it suggests there are too many teachers fully trained to meet the needs of all students seeking postsecondary education.

The problem, then, of recruiting, training, and using the services of qualified teachers and other personnel at our schools and colleges in such a way as to respond to carefully identified needs of all students is enormously difficult. As we study that problem we must become more sensitive to the importance of maintaining a balance between adequate supply and carefully thought-out demand for teachers. The extreme imbalances that have occurred in the shortage years of the 1940's, 1950's, and 1960's in both the schools and colleges can be avoided even though an apparent "surplus" is upon us, if we have a clear view of our priorities and of the needs of the students to be served. This report is designed to contribute to that understanding.

S. P. Marland, Jr.
U.S. Commissioner of Education

Preface

This is the third of the annual reports on the state of the education professions which the Commissioner of Education is required to publish, as stipulated by the Education Professions Development Act. The first report in 1968 was an effort to describe the "state of the art" among the education professions at all levels. In a separate section it included statistical information on education personnel from preschool to graduate school and a descriptive analysis of training supported under all Federal programs, the first time such material had been presented in this form. The second report, combining 1969 and 1970, was devoted to analyzing the problem of educating students from low-income families and the staffing patterns of schools which serve these students.

The annual report for 1971-72 is to be issued in four parts—each to be devoted to a separate concern. This report, which is part I, discusses the issue of supply of and demand for education personnel in public elementary and secondary schools and in colleges and universities. The other parts of the report will concern differentiated staffing, the supply of and demand for special education personnel, and a manpower survey of the school library media field.

Part I attempts to explore the nature of the teacher surplus in institutions of higher education and in the elementary and secondary schools. No new national data of great consequence are offered. Rather than view the issues solely in quantitative terms, this report emphasizes the qualitative side of the problem of an adequate supply of teachers. The fact is that gross national figures can be misleading and not very helpful in trying to gauge the nature of the problem with any accuracy. There are no qualitative national norms; each school district and institution of higher education has its own standards and its own needs. Only against those standards and needs can the "shortage" or "surplus" of teachers be measured.

Chapter 1 analyzes the alleged "Ph.D. glut" in postsecondary educational institutions. Beginning with an analysis of past and future trends in enrollments and degree production, the study attempts to examine job prospects in postsecondary institutions in the 1970's and to examine the policy issues involved in the preparation and hiring of teachers.

Chapter 2 is a case study of 10 school districts of differing sizes and locations and serving quite different communities. The study examines the kinds of decisions which go into the staffing of schools, particularly those decisions which involve the effective demand for teachers—not only the number but also the kind of teachers recruited to meet the needs of the schools. Most national and State studies focus on the quantitative aspects of teacher supply and demand, but only a few concentrate on specific elements of recruitment policy. This study analyzes concrete situations which demonstrate a critical point made in the Commissioner's 1969-70 Report on the Education Professions: " 'Demand' is defined by budgets. It is somewhat arbitrarily limited by fiscal capacity as perceived by the political decisionmakers and therefore does not measure total need. Indeed it only implicitly reflects concerns for the quality of education or equalization of educational opportunity." This case study, then,

is an effort to put some meat on what have been largely statistical bones.

Chapter 3 is a regional analysis of the supply of and demand for teachers for 1969, the latest year for which the U.S. Office of Education (USOE) currently has finished data. The data are taken from the USOE Staffing Survey of some 4,000 elementary and secondary schools.

Chapter 4 sets forth the Office of Education's program priorities for 1973. It outlines plans for strengthening continuing programs supported by the Education Professions Development Act (EPDA) of 1967 and the new directions prescribed for EPDA efforts under the Education Amendments of 1972.

Each year the previous years' program activities are summarized in the Commissioner's report. Those supported from fiscal year 1971 funds, most of which took place in the 1971–72 academic year, are described in the appendix along with brief summaries of EPDA program funding in previous fiscal years.

ACKNOWLEDGMENTS

This report was prepared under the direction of Gerald W. Elbers, Chief of the Undergraduate Preparation of Educational Personnel Branch in the National Center for the Improvement of Educational Systems, where responsibility for the report has been assigned.

As has been the practice in previous reports, reliance has been placed on outside agencies and individuals to help in its preparation.

The analyses of the supply of and demand for elementary and secondary personnel (chapter 3) and of the supply of and demand for postsecondary teachers (chapter 1) were prepared under contract with Joseph Froomkin, Inc., of Washington, D.C.

The case study in chapter 2 of the 10 school systems was conducted under contract by A. D. Little, Inc., of Cambridge, Mass.

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CHAPTER 1

An Analysis of the "Ph.D. Glut" at Postsecondary Institutions

During the decade of the 1970's, between 180,000 and 190,000 new postsecondary teachers will be hired. These teachers will be trained in the graduate schools of our universities. If projections about the supply and demand for highly trained personnel (especially Ph.D.'s) are anywhere close to being correct, and if the employment patterns of the 1960's were to continue in the 1970's, then there would be more persons with doctorates than will be required to fill available jobs. However, although it is likely that there will be no shortage of highly trained or certificated personnel willing and able to fill teaching slots, it is not at all clear that the postsecondary sector is prepared to provide the kinds of training that teachers will need for jobs in the 1970's. Hence, concerns other than teacher training may be more urgent.

With job prospects for the most highly trained products of the postsecondary system changing drastically, the energy and the creativity of graduate departments will very likely be directed to modifying their programs to make Ph.D.'s more desirable to potential employers. It is also quite likely that the orientation of master's programs will be affected by the increasing supply of college-trained personnel. In fact, the training for that degree may change to the detriment of the training of the college teacher, as will be discussed. Under those circumstances the requirements for training postsecondary teachers may be deemphasized even more.

The important policy problems involved in the training of postsecondary teachers will be resolved only after careful consideration of the following issues:

(1) How many and what kinds of postsecondary teachers shall we need?

(2) To what kinds of training should they be exposed?

(3) How different should this training be, as compared to the training in the 1960's?

This third question is especially important. During the 1960's, the "match" between teachers and students was far from ideal. Much of the campus unrest during the past decade may be attributed to student dissatisfaction with the courses offered to them.[1] It can be argued that, while the character and orientation of the student body changed drastically during the recent past, the course content and the methods of instruction did not.

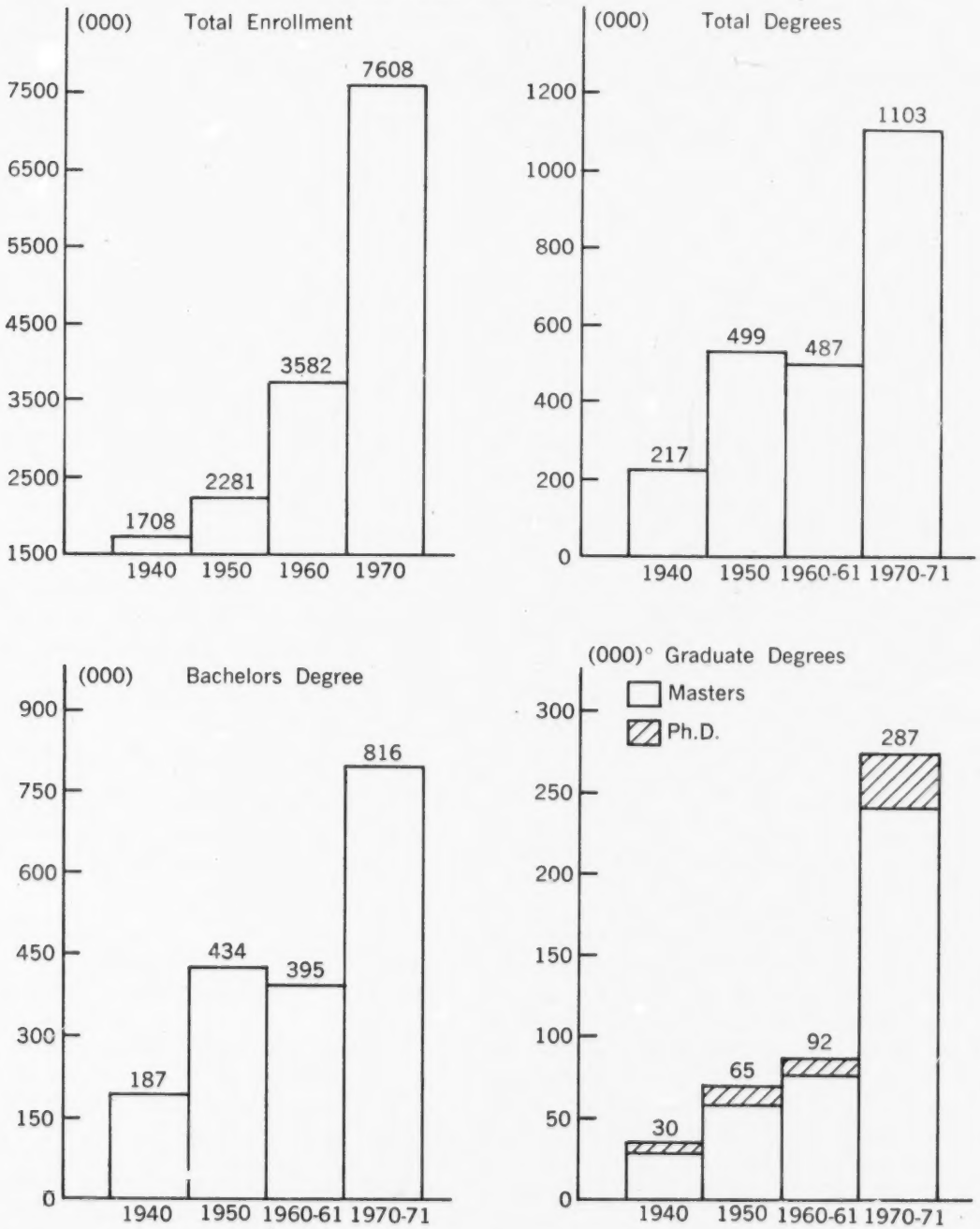
This chapter will examine the growth of past enrollment and will project enrollments, degree production, and stocks of potential teachers. In light of these, there will follow a discussion of desirable changes in teacher preparation.

PAST TRENDS IN ENROLLMENT AND DEGREE PRODUCTION

The past two decades have witnessed uninterrupted growth in postsecondary education. In 1950, 3.8 percent of the population, or 5.8 million persons out of 152 million, had completed 4 or more years of college. In 1970, the number had risen to 12.7 million, or 6.6 percent of the total population of 205 million.[2] The greatest quantitative increase in higher education occurred during the 1960's. The number of bachelor's degrees granted doubled between the beginning and the end of the decade, and the

Chart 1

DEGREE-CREDIT ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATON AND DEGREES CONFERRED 1940, 1950, 1960, 1970



SOURCE: 1940 and 1950 data adapted from U.S. Bureau of the Census, **Statistical Abstract of the United States,** 1970 (91st Edition), Washington: U.S. Government Printing Office, Tables 191 and 200. 1960 and 1970 data, U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics. **Projections of Educational Statistics to 1979–80,** Washington: U.S. Government Printing Office, 1971, Tables 6 and 21.

number of advanced degrees conferred increased even more rapidly. Total enrollments in post-secondary education almost doubled between 1940 and 1950, slowed to a 30-percent increase during the 1950's, and more than doubled again during the 1960's. By the end of the 1960's some 8 million students were attending post-secondary institutions, either part time or full time.[3]

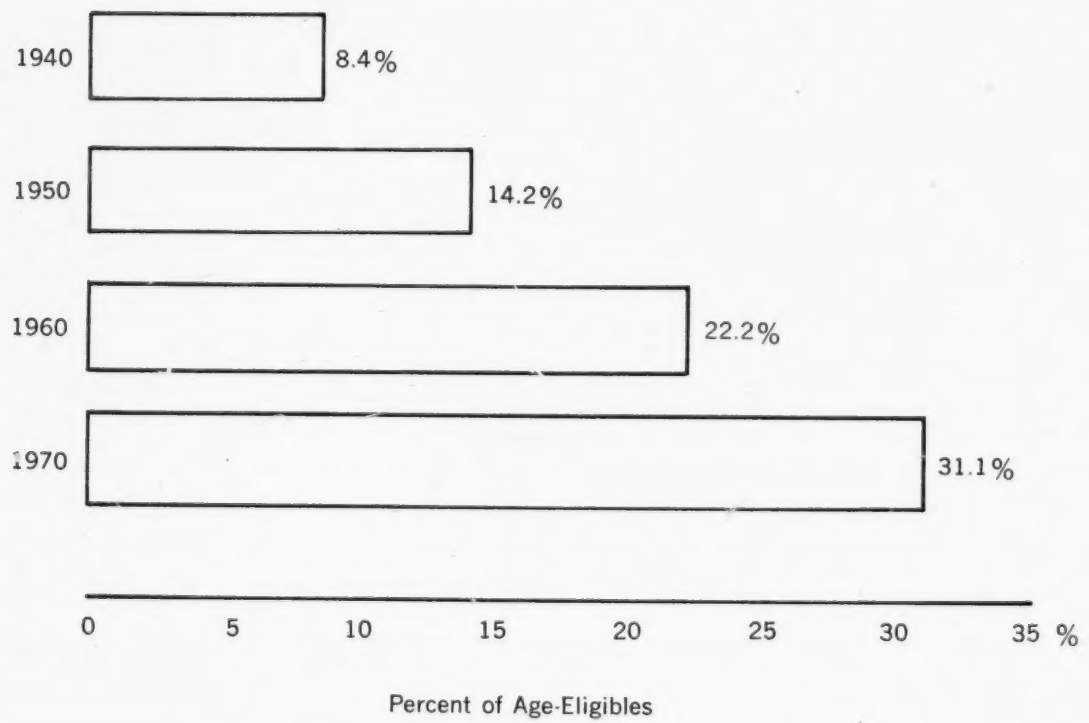
Enrollments

Part of the postsecondary expansion was due to demographic trends. The higher number of births during the 1940's (as compared to the 1930's) increased the number of college students in the eligible age groups in the 1960's by about a quarter over the decade of the 1950's.[4] Adding to increasing enrollments was the 22-percent increase in the rate of graduation from high school in the 1960's.[5] In addition, the propensity of high school graduates to enroll in college increased. Between 1890 and 1960, roughly 50 percent of all high school graduates enrolled in college; during the 1960's, the proportion increased to 60 percent.[6] Also toward the end of the 1960's, increased availability of student aid (mainly provided by Federal funds) encouraged more students to attend college full time and to stay in college for far longer periods—until graduation from the 4-year course. That is, students were less likely to drop out for financial reasons.[7]

The postsecondary sector at the end of the

Chart 2

PERCENT OF AGE-ELIGIBLE POPULATION (18–24) ATTENDING INSTITUTIONS OF HIGHER EDUCATION 1940, 1950, 1960, 1970

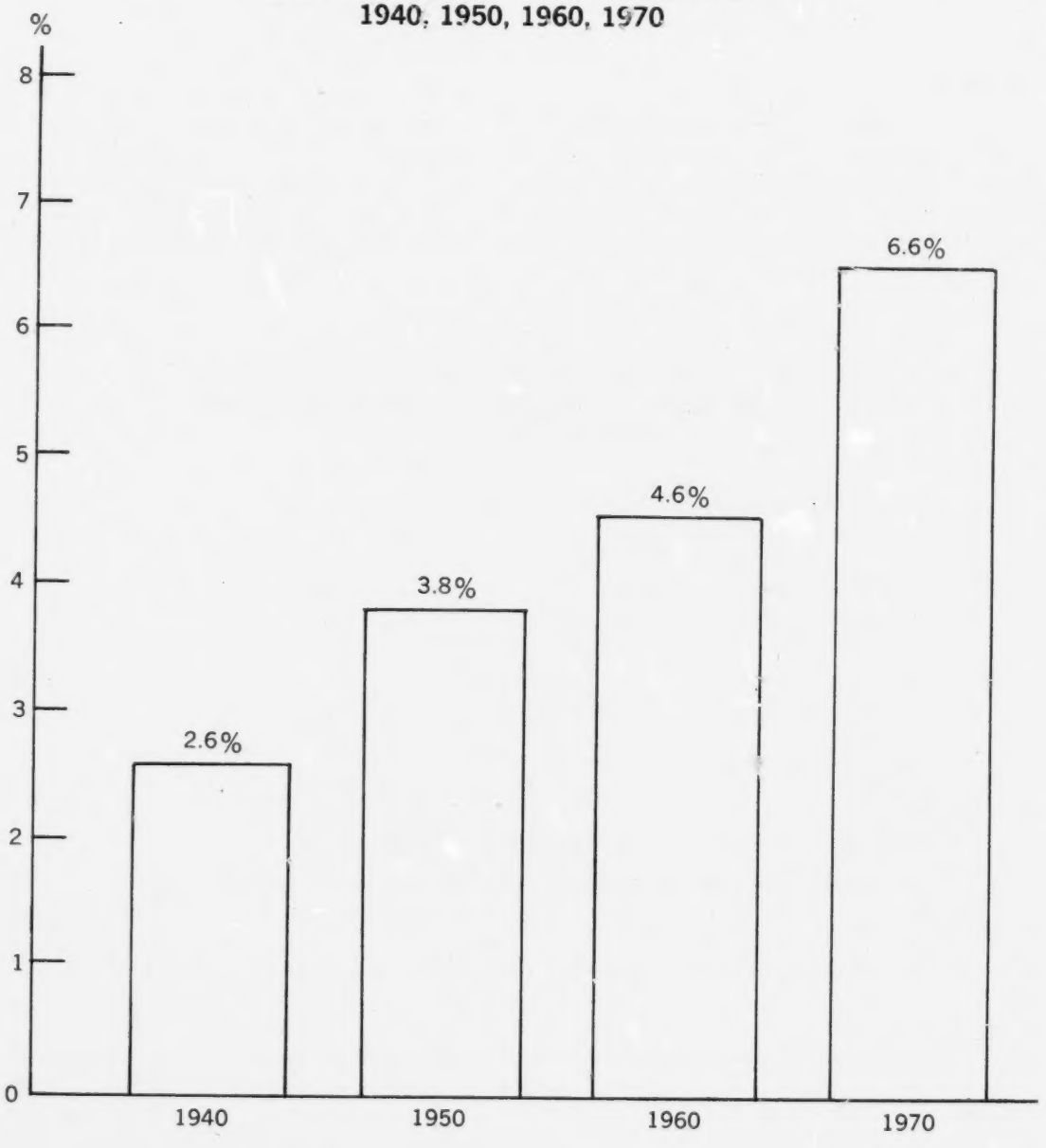


SOURCE: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, **Digest of Educational Statistics, 1970**, Washington: U.S. Government Printing Office, 1970, Table 86.

decade was quite different from that at the beginning of the 1960's. The increase in post-secondary enrollments was accompanied by important shifts in the composition of the student body, as young people from more heterogeneous backgrounds, both in terms of socioeco-

Chart 3

PERSONS WITH 4 OR MORE YEARS OF COLLEGE
AS PERCENTAGE OF TOTAL POPULATION
1940, 1950, 1960, 1970



SOURCE: 1940, 1950 and 1960 data, U.S. Bureau of Census, **Statistical Abstract of the United States, 1970** (91st Edition), Tables 2 and 162; 1970 data, **Current Population Reports,** Series P–20, No. 207 "Educational Attainment: March 1970" and Census of Population: 1970, **General Population Characteristics,** Advance Report PC(V2)–1 United States, Table 1, Washington: U.S. Government Printing Office, 1970.

nomic origins and high school preparation, opted for college. The new college clientele not only encouraged the growth of new types of postsecondary institutions but also had an important effect on the demand for instructional personnel. On the whole, the high school class standing of the entering freshman was somewhat lower in 1970 than in 1960.[8] The dramatic increase in the number of middle-class students with indifferent high school records who entered college during this decade had even more impact on the composition of the student body than did the larger numbers of academically well-prepared students from poorer families.[9]

The majority of postsecondary institutions changed their admission requirements to accommodate the changing student body, although the more well-established, prestigious institutions did not. Those institutions with less selective entrance requirements increased enrollments faster than those which catered to academically gifted students. The capacity of the former was supplemented by the unprecedented growth of the 2-year institutions—junior colleges, community colleges, and technical institutes—which catered to students with below-average income and academic credentials.

In addition, as the percentage of graduate enrollments increased faster than undergraduate attendance new full-scale universities were established and older ones expanded. A large number of State schools, which had previously been teacher-training institutions, expanded within only a few years into full-status universities with expensive and often prestigious graduate departments. The increased trend among students to go on to graduate school is evidenced by the 200-percent increase between 1960 and 1970 in the number of advanced degrees granted, and by the 70-percent increase during the same period in the number of persons who completed 5 or more years of college.[10]

Degree Production

By 1970, the United States had an unprecedented supply of college graduates: 10.2 million persons had bachelor's or first professional degrees, 2 million persons had master's degrees, and 307,000 had Ph.D.'s.[11]

These figures point up society's growing inability to absorb increasing numbers of persons with advanced education. In the course of the past few years—when the imbalance in the supply and demand of persons with advanced degrees in such fields as physics and engineering, as well as the increasing difficulties in the placement of persons with Ph.D.'s in most disciplines became evident—voices have been raised about curbing or changing the character of graduate, and especially Ph.D., programs. While some observers feel that prospects for employment for persons with graduate degrees will continue to decline, others ascribe the decreasing job opportunities to the present, and presumably temporary, slowdown in the economy. Both groups are partially right in their arguments. Part of the Ph.D.'s present difficulty in finding employment is due to the economic slowdown. On the other hand, the era of shortages of highly trained personnel is clearly behind us. While the demand for persons with advanced degrees was hardly affected during past recessions, this was not the case during this latest downturn. For the first time, professional workers and new entrants into the labor force with advanced degrees have felt the effect of the economic slowdown on job opportunities. Between 1969 and the end of 1970 the unemployment rate for professionals increased from 1.0 to 2.5 percent.[12] It is likely that, in the long run, persons with advanced degrees will have to content themselves with lower status jobs. Similarly, bachelor's degrees recipients will start their careers at lower professional levels than formerly.

FUTURE TRENDS IN ENROLLMENTS AND DEGREE PRODUCTION

Current college attendance projections assume a continuation of the trends of the 1960's into the 1970's. These projections assume that there will be no change in the beliefs, orientation, and ambitions of the young. Up to now the "youth revolution" has not affected college entrance or graduation rates. Contrary to the impression that for many youths education is becoming less linear with increasing numbers of interruptions, the proportion of both men and women attaining 4 years of college before the age of 25 increased from 29 percent in

1960-64 to 37 percent in 1965-69.[13] It would appear that while a small proportion of students was either dropping out or fading out for periods of time, enough students elsewhere stayed in school and received their degrees earlier.[14] It is difficult to predict to what extent disaffected youths are trend setters, and whether the aspirations of the majority of young people to attend college will continue to increase. More important for the purposes of this report, the extent to which young people who graduate from college will continue into the graduate school remains uncertain.

Slower population growth, which will arrest the increase of enrollments in elementary and secondary education, will merely slow the growth rate of postsecondary enrollments if past trends continue. The Office of Education's National Center for Educational Statistics (NCES) estimates that the graduating high school class in 1979 will be almost a third larger than in 1969. By contrast, the high school class in 1969 was three-fifths again as large as the class of 1959. Thus, postsecondary enrollments in the 1970's will increase at a slower rate than in the 1960's. The total full-time-equivalent number of postsecondary students is expected to grow by 50 percent in the 1970's, a much slower growth rate than the 110 percent in the 1960's. NCES estimates that nearly 8 million undergraduates will be enrolled full time in degree programs at postsecondary institutions by the end of the decade. An additional 2.7 million students will be attending undergraduate programs part time, and some 1.1 million more students will be enrolled in nondegree programs.[15] The growth of full-time-equivalent enrollment is projected at 66 percent for junior colleges and 41 percent for undergraduates in 4-year institutions.[16]

These increases in enrollments are predicated on three assumptions: (1) that an increasing proportion of high school students will persist through high school to graduation; (2) that more children of poor parents will opt for college; and (3) that indifferent records in high school will not bar a student from enrolling in college. While 56 percent of all students enrolled in degree programs of postsecondary institutions in 1960 had graduated in the top quarter of the high school class, by 1970 the proportion had declined to 46 percent. By 1980, we can expect a further 6-percent drop in this portion of undergraduate enrollment. While students from the lowest academic quartile of the high school class accounted for less than 4 percent of undergraduate enrollment in 1960 and less than 6 percent in 1970, they may account for 10 percent of the undergraduate population by 1980. The share of the lower half of the high school class is certainly likely to exceed a quarter of the undergraduate enrollment and may well reach a third of the total. [17]

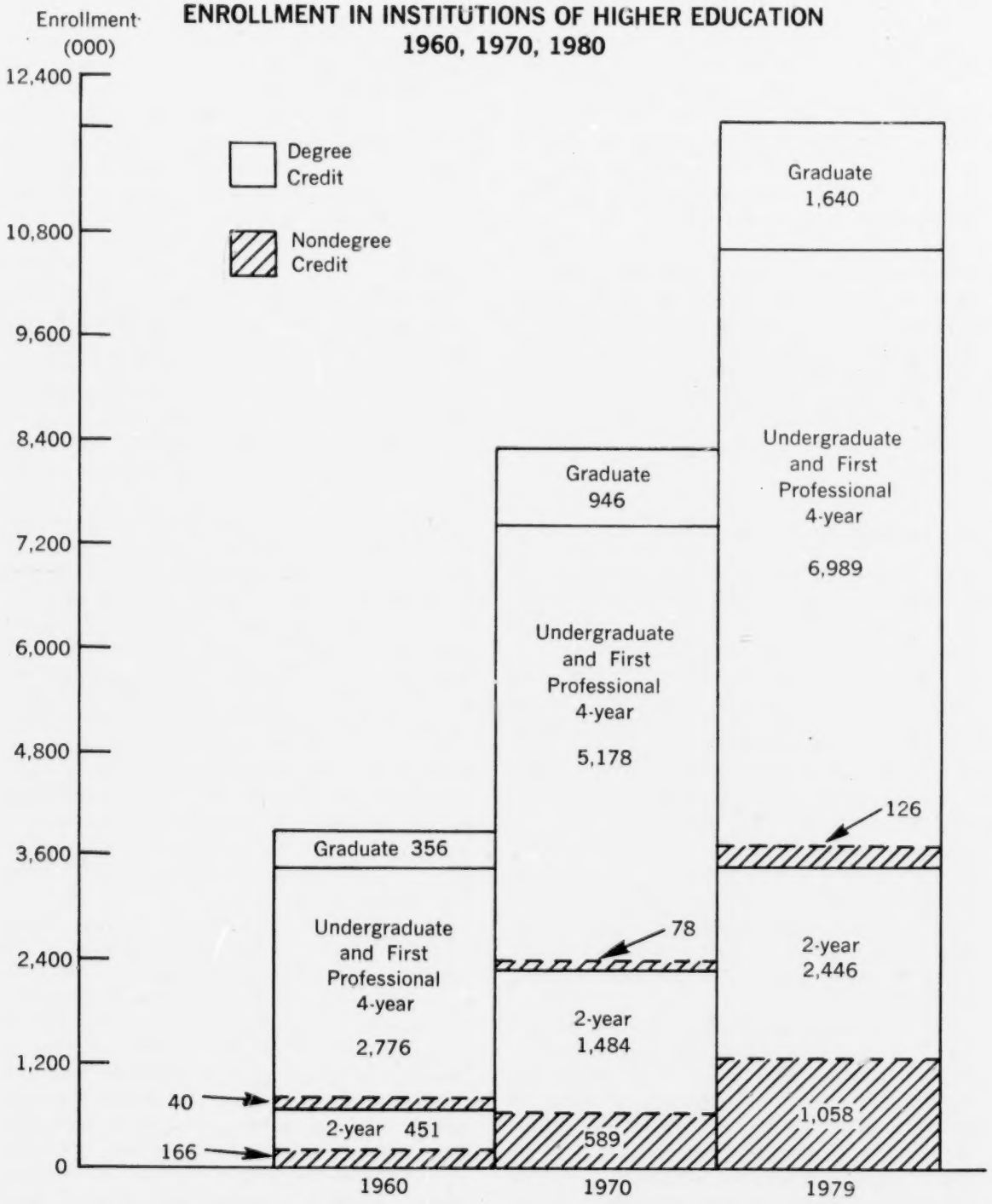
Past projection of trends would lead to the assumption that enrollment in graduate schools will grow at least as fast as total postsecondary enrollment or even faster. The NCES projects resident graduate enrollment for the period 1969–79 to increase 65 percent.[18]

However, there is considerable difference of opinion about enrollments and degree production at the graduate level. For example, Professor M. Haggstrom has prepared estimates for the Carnegie Commission on Higher Education. His high estimate anticipates graduate enrollments will grow 113 percent between 1970 and 1980. His middle projection is for a growth of 88 percent, while his low is very close to the NCES projection, 67 percent.[19] These figures bracket the projections of Allan M. Cartter, Chancellor of New York University, who has studied the demand and supply for doctorates, and who estimates doctorate production at 362,000 for the period 1970–80.[20] On the other side of the debate are estimates by the National Science Foundation (NSF), released in May 1971. The NSF projects Ph.D. production at 400,000 between 1970–80 and graduate enrollment for advanced degrees at less than a million, an increase of some 24 percent over 1970.[21] If the NSF projections correctly describe the future, then the demand for graduate faculty would be drastically reduced.

Another possible outcome of developments in the production of graduate degrees was suggested by Joseph Froomkin in a paper prepared for the American Association of Universities. The paper is based on models developed by the USOE's Office of Program Planning and Evaluation, which took into account the role of financial aid in influencing the retention rate at both the graduate and under-

Chart 4

ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION 1960, 1970, 1980



SOURCE: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, **Projections of Educational Statistics to 1970–80**, Washington: U.S. Government Printing Office, 1971, Tables 10, 11 and 13.

graduate level Concluding that existing Ph.D. projections were too high, Dr. Froomkin estimates Ph.D. production during the 1970's at a figure closer to 325,000–350,000.[22] With graduate student support either failing to increase or being discontinued by some agencies, fewer students are likely to persist in obtaining Ph.D.'s. The Office of Management and Budget estimates that the number of graduate students supported by Federal funds declined from 121,000 in 1969 to 107,000 in 1970.[23]

The difficulty experienced by young, doctoral recipients in finding suitable jobs appears to discourage recent bachelor's degree recipients from applying to graduate school. For example, news stories about the career plans of recent Harvard and University of Chicago graduates indicated that in the spring of 1971 a third fewer were planning to attend graduate school [24] than was the case in the late 1960's.

JOB PROSPECTS IN THE 1970'S

The opportunities for college graduates in the job market of the 1970's will be drastically affected by demographic factors. In 1970, elementary and secondary teachers accounted for as many as 18 percent of all college graduates and close to 23 percent of all working college graduates.[25] During the 1970's the demand for teachers will increase at a very slow rate as the tail end of the baby boom of the 1950's keeps the school population constant or declining. At the same time, the bumper crop of babies of the early 1950's will be graduating from college and entering the labor force. Thus, unless a number of jobs are redesigned to be suitable for college graduates, many young degree holders will be forced to take jobs for which a college degree was not a prerequisite in the 1960's.[26]

Serious readjustments are also anticipated for holders of advanced degrees, especially Ph.D.'s. During the 1960's, about half of the Nation's Ph.D.'s were employed by academic institutions, and a sizable proportion, probably close to 20 percent, were employed in research and development activities.[27] During the 1970's, though the total enrollment in college is likely to increase as much as it did in the 1960's, the rate of growth of enrollment will slow down from an average 8.0 percent a year in the 1960's to 4.1 percent.[28] At the same time, the rate of growth of research and development, which increased 7 percent in current dollars and 4 percent in real terms during the 1960's, is expected to continue at 4 percent, to equal the rate of growth of the gross national product (GNP).[29] With the cost of research increasing, employment in research and development will not grow very fast during the next decade, forcing an even larger proportion of advanced degree holders to find jobs elsewhere.

If recent declines in the birth rate continue into the next 10 years, we are likely to experience a stable or declining elementary school population in the 1970's, and we are practically certain to have a small decline in college enrollments during the late 1980's.[30] These demographic developments will affect the demand for persons with advanced degrees.

Even the more remote developments in the elementary and secondary school sectors are likely to affect the level of demand for master's degree holders. Over the next 10 years, the school-eligible population aged 5 through 19 is likely to decline by 1.0 million or 4.2 million (depending upon which demographic projection one uses). In all probability the number of children aged 3 through 5 in preschool will increase greatly. However, even if one postulates a rather startling growth in early childhood enrollments, the total employment of instructional staff, which grew from 1.7 to 2.5 million between 1960 and 1970, is not likely to increase by more than 400,000 during the present decade.[31]

By 1970 a teacher without a B.A. was a rarity in public school, as 96 percent of all teachers were college graduates. Between 1960 and 1970, the number of secondary school teachers with master's degrees increased from 24 to 30 percent.[32] In the future this trend is likely to be accentuated as more teachers will earn master's degrees either before entering upon a teaching career or as part of their continued inservice training. It has been predicted by some that the length of time the average teacher stays in teaching will increase from 12 to 15 years. If this proves to be correct, it is quite possible that close to 45 percent of

all teachers will obtain master's degrees. Startling as this estimate may appear, it is probably conservative. As experienced elementary and high school teachers will need retraining to teach preschool, it will be only natural for them to obtain an advanced degree as part of their retraining.

The higher educational attainment of teachers will undoubtedly have an effect upon the field of school administration, although it is not yet clear what form the effect will take. More administrators may seek an Ed.D. or a Ph.D. degree. Currently, it is estimated that fewer than 2,000 persons in elementary and secondary schools hold an Ed.D. or Ph.D. Some form of doctorate may become a prerequisite to the job of principal or head of a large high school department. A small increase in the total number of persons with doctorates employed in elementary and secondary schools (e.g., from the current less than one-tenth of 1 percent to 1 percent of the total) could result in an increase of 20,000–25,000 doctorate positions.

An overview of future enrollments, the demand for college graduates, and especially the demand for Ph.D.'s can only lead to the conclusion that conditions in the academic world are about to change drastically. Especially in light of the increasing penury of postsecondary educational institutions, forecasts based on past trends which reflect social demand for education may never come true because they estimate what students may wish to achieve, rather than what this society is likely to pay for and provide.

The big boom in graduate education, which was aided and abetted by various forms of assistance to set up, operate, improve, strengthen, and expand graduate education with the help of Federal grants, has whetted the appetite of numerous schools to upgrade themselves in the academic pecking order of postsecondary education. The success of a number of State universities (e.g., Michigan State or Southern Illinois) in building up graduate departments has encouraged imitators. More and more schools are planning for or have already developed graduate departments. Some grant only master's degrees while others award both master's and Ph.D.'s.

During the past decade, the 50 leading Ph.D.-producing institutions lost some 7 percent of the total Ph.D market. At the beginning of the decade these 50 institutions were granting 78 percent of the Ph.D.'s; by the end of the decade, their share had declined to 71 percent. These schools are now keeping constant or reducing the intake of graduate students. Other schools, by contrast, are increasing their intake. It is quite possible that by 1980 no more than two out of three Ph.D.'s will be graduated from these larger schools.

If low estimates of Ph.D. production are reasonable, then similarly lower estimates might be made for total enrollments in graduate schools. It is much more likely, though, that graduate school enrollments will grow faster, but that a larger number of students will content themselves with the master's degree. The following discussion of job opportunities for college graduates leads to the conclusion that additional training will be demanded by many bachelor's degree recipients in an increasingly tight job market. Hence, it is quite likely that the production of Ph.D.'s may fall short of the NCES projections, but that its forecast of master's degrees granted may prove to be accurate. If this assumption is adopted, full-time-equivalent enrollment in graduate schools can be estimated to increase 50 percent during the next 10 years. This is the lower realistic limit of future enrollments. The higher limit is 65 percent, the NCES estimate.

DEMAND FOR COLLEGE GRADUATES AND PERSONS WITH ADVANCED DEGREES

The most complete survey of job prospects for college-educated workers in the 1970's was prepared by the Bureau of Labor Statistics. It anticipates a rough balance between the supply and demand for college graduates during the next decade.[33] It is important to remember that this extrapolation of past trends was based upon developments through 1967 only. During the past 5 years some of the conditions affecting job opportunities for the college trained have changed. The economy's slower-than-expected growth, the redirection of research and development outlays, and the emphasis on cost-cutting by industry have all reduced job opportunities for college grad-

uates. A more recent analysis, including developments in 1971, has been made of the impact of newly manifested trends in the economy upon the job outlook for all college-educated persons. This analysis indicated that, if the patterns of employment for persons with 16 years of education which prevailed in 1970 continue into the 1980's, it is likely that there will be a surplus of some 7 percent of college graduates in 1980.[34]

Current employment patterns, however, will not continue unchanged, and college graduates will fill jobs which were formerly filled by people with less education. In effect, the competition for professional and technical jobs will be much keener in the 1970's than in the 1960's. The ambitious young college graduate who aspires to a promising entry-level job, or who wants to better himself, will probably be tempted to acquire a graduate or professional degree. Thus, it is quite likely that the number of persons in graduate school aspiring to master's, as contrasted to doctor's degrees, will grow apace. The jobs filled by persons with master's degrees have not been documented in depth. They are an in-between category, neither baccalaureate nor Ph.D. holders, and it is generally assumed that they work at the level of their competence. A recent study of career opportunities in the 1960's indicated that those recent graduates in social sciences and humanities who earned master's degrees worked in jobs which were consonant with their training, whereas those with only baccalaureate degrees generally did not.[35]

By contrast, the opportunities for persons with doctorates and their career patterns have been the subject of much concern. It has been estimated that as of 1970, 275,000 persons held doctorates and were in the labor forces. Of the total, 153,000 equivalent man/years were accounted for by teaching, 79,000 by research and development, and the rest by employment in industry, public agencies, and foundations.[36]

Summarizing a recent conference on job propects for Ph.D.'s, Messrs. Kidd and Wolfle said:[37]

> In universities all over the country, candidates for the doctor's degree are worrying about finding jobs. Instead of being able to pick and choose, as was the happy lot of their predecessors for the past couple of decades, some are wondering if they will receive any suitable offer. Projections of the future market all agree that the number of positions will increase substantially throughout the 1970's. The projections also agree that the number of people holding doctor's degrees will also increase. Barring a major depression, there will be more positions requiring the doctorate; there will be more candidates for those positions; and there will be so many candidates that a considerable number will enter non-traditional jobs to do work that in past years has not attracted many holders of the doctorate. Ten years from now, unless corrective actions are taken, candidates will face an even bleaker prospect, for higher education has expanded to the point of being able to educate more doctoral candidates than can be effectively employed.

DEMAND FOR FACULTY FOR POSTSECONDARY INSTITUTIONS

Total Faculty Requirements

Most projections of full-time instructional faculty positions estimate the total demand (including replacements) at 180,000 for the decade ending in 1980. The total number of full-time faculty positions in the course of the next 10 years is thus likely to exceed the total number of openings during the 1960's by only 5,000. By contrast, the number of persons with doctorates entering the labor force will double during the coming decade compared to the 1960's.

Junior colleges, which had an estimated 13,000 full-time faculty members in 1960 and expanded their staffs to number an estimated 53,000 by 1970, are likely to add an additional 25,000 full-time positions during the 1970's. With attrition from death and retirements added to this figure, possibly as many as 45,000 full-time jobs are likely to open up in 2-year institutions.[38] The teaching of undergraduates in 4-year colleges, which provided for 55,000 new positions in the 1960's, is likely to show a growth of only 30,000 positions. However, openings due to attrition are likely to create an additional 46,000 positions, for a total of 76,000. In the graduate sector, it

may be well to disaggregate the growth into two segments: teaching, and research and development. It is estimated that in the 1960's two-thirds of the total 38,000 increase in graduate faculty posts, or 25,000, were accounted for by teaching positions, while the rest were posts paid for by research and development (R&D) moneys. In the 1970's, an additional 15,000-20,000 teaching posts are likely to open up. R&D employment is not likely to grow by more than 5,000 positions. Thus, with a provision for replacements, another 59,000 jobs will materialize.[39]

Comparing the total number of openings for the period 1960–69 with those for 1970–79, one is struck by the fact that, despite the different rates of growth in various sectors, the new positions for faculty will not be too different. Junior colleges are estimated to account for 45,000 new openings in the 1970's as compared to 85,000 in the 1960's. Undergraduate teaching is likely to provide 76,000 new openings in the 1970's versus 85,000 in the 1960's; and graduate faculties, 59,000–10,000 more than in the 1960's. These estimates assume the continued growth of the postsecondary system pretty much along the patterns which were experienced in the 1960's. If these patterns do not continue, however, the demand for faculty may change quite considerably.

An alternative estimate of the future demand for faculty may be derived from estimates recently published by the National Science Foundation.[40] The NSF estimated that the total openings for graduate faculty with doctorates in science and engineering would be 35,000 for graduate faculty and 47,000 for undergraduate faculty. Since these assumptions indicate that 95 percent of the graduate faculty slots will be filled by Ph.D.'s, and some 60 percent of the faculty is in science and engineering, the NSF estimate would place total graduate demand for faculty at 61,000. These estimates are higher than the aforementioned ones because they assume that (1) either R&D outlays will rise with the growth of enrollments, or (2) R&D outlays per person will continue to grow, though not as fast as during the past 10 years. These assumptions may prove incorrect. For undergraduate faculty, NSF assumes that 62 percent of the new positions will be filled with Ph.D.'s. Using the same line of reasoning, NSF would expect undergraduate openings to total 130,000. Thus, NSF implies that new positions would total 191,000, some 11,000 more than the aforementioned estimates.

The Demand for Doctorates in Postsecondary Institutions

It is rather difficult to predict how many persons with doctorates will fill faculty positions. The careers of persons with doctoral degrees have not been documented fully. While the career patterns of scientists and engineers have been studied, the careers of doctorate recipients in the humanities and education have to be guessed at. Whereas there is not great uncertainty about the demand for postsecondary faculty in the 1970's, the number of positions which will be filled by persons with doctorates, and the number by persons with lesser education are by no means clear. The difficulty in projecting the degree level of incumbents is due to the drastic changes in the supply of Ph.D.'s in the 1970's as compared to the 1960's. During the 1960's, 180,000 new doctorates were granted. The same decade probably witnessed the death or retirement of some 30,000 Ph.D.'s. The net increase of 150,000 persons with doctorates was distributed as follows:

(1) 100,000 found academic jobs—
   (a) about 70,000 persons with doctorates were added to the teaching faculty;
   (b) some 20,000 found jobs in research and development;
   (c) about 5,000 received postdoctoral fellowships; and
   (d) another 5,000 persons entered administrative jobs.
(2) Of the remaining 50,000, 30,000 filled nonacademic R&D jobs, and the rest took administrative or other jobs in government and industry.

The next 10 years are likely to witness the production of between 320,000 and 450,000 doctorates. After deaths, emigration, retirements, and temporary withdrawals from the labor force by women, the net additions will number between 300,000 and 400,000. If the

pattern of employment of the late 1960's continues, no more than 12,000 will find jobs in research and development. Even if all new jobs in research and development are filled with doctorates and the proportion of employees with doctorates to total employment increases some 50 percent, no more than 50,000 doctorates will find jobs in research and development. The remaining 250,000 to 300,000 could fill all full-time faculty positions not occupied by persons with doctorates. If one assumes that some 20,000 persons with doctorates may take administrative positions in postsecondary institutions, that another 20,000 may fill job openings in private industry and government, and that the rest become postsecondary teachers, Ph.D.'s could occupy 70 to 75 percent of all positions.

These ratios of doctorates to full-time faculty would certainly change the certification patterns of existing faculties. In the late 1960's, no more than 6 percent of the faculty in 2-year institutions had a Ph.D. In 4-year institutions, the ratio of doctorates to full-time faculty was probably slightly over 40 percent by 1970; it reached close to 60 percent in universities. On graduate faculties, including professional schools, between 85 and 90 percent of all faculty members held the Ph.D. If all additional positions in junior colleges were filled by Ph.D.'s, some 40 percent of the faculty there would have that degree. If all vacancies were filled with doctorates the proportion would rise to 60 percent. In 4-year undergraduate instruction, a ratio of 71 percent of doctorates to full-time faculty would be reached if all new positions were filled by doctorate recipients. Similarly, in graduate departments more than 95 percent of the faculty would have doctorates.

Even then, there would be enough persons with doctorates left over to fill three times as many jobs as would be available if career patterns of the 1960's are projected in the 1970's. Even if 20,000 additional doctorates found jobs in secondary schools, the rate at which doctorates are hired in the private sector would have to be double that of the past decade. It seems unlikely that postsecondary institutions will absorb as many doctorates as will be available. For instance, junior colleges often do not wish to fill their vacancies with persons with doctor's degrees. In 4-year institutions, many faculty positions in fine arts, law, journalism, and sometimes business are filled with nondoctorate holders. It has been suggested that no more than 70 percent of all vacancies are likely to be filled by persons with doctorates during the 1970's. This estimate appears to be generous, since it would increase the doctorate proportion of full-time faculty time from 45-50 percent in 1970 to 55-60 percent in 1980.[41]

Even if this rather heavy infusion of persons with doctorates takes place in the academic world in the 1970's, four to five times as many persons with doctorates will have to find jobs in government and industry in areas other than research and development during the next decade. Hence, the young holder of a doctorate, instead of starting his career in research and development, will have to look elsewhere.

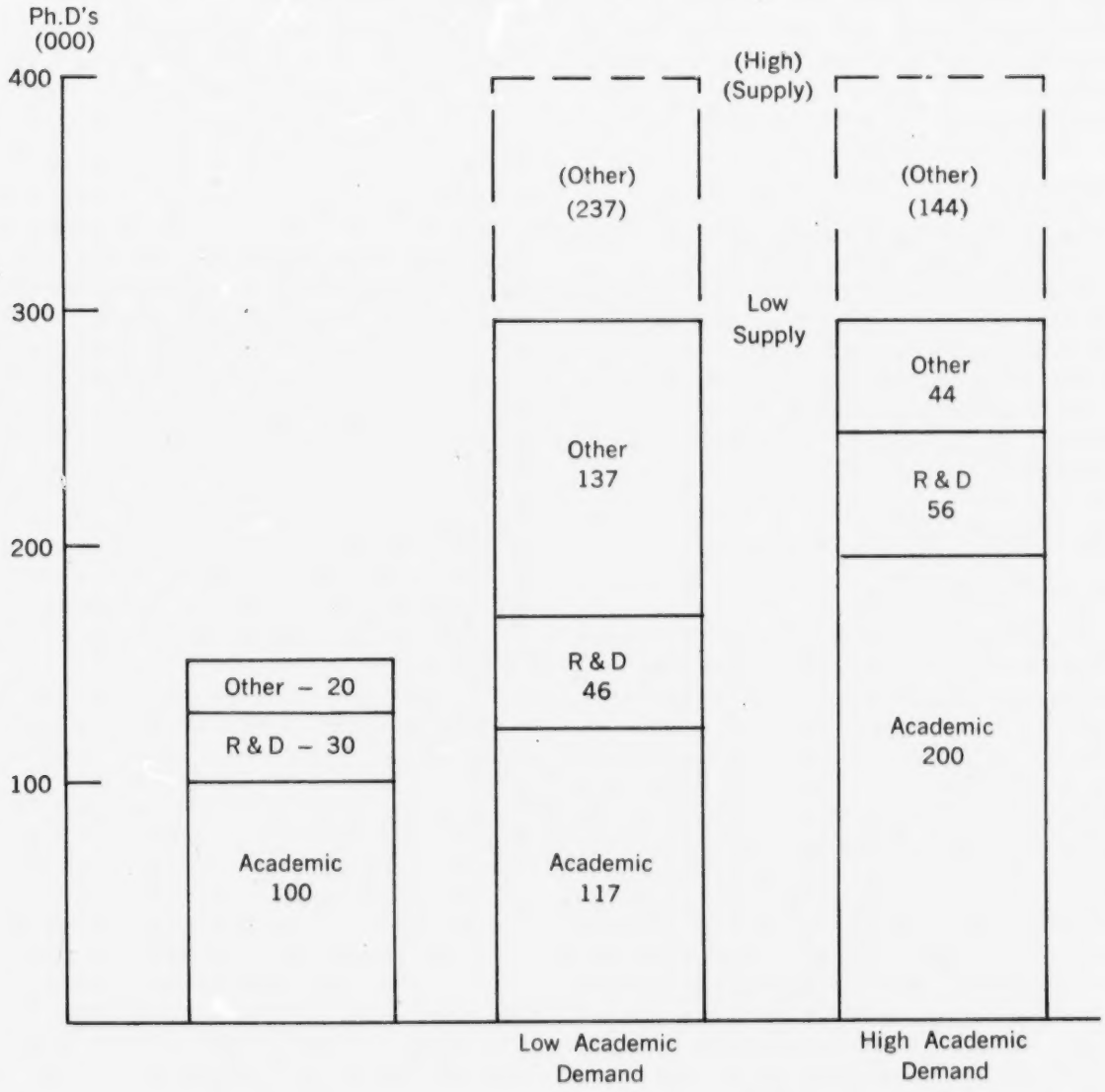
ISSUES RELATING TO THE TRAINING OF POSTSECONDARY TEACHERS IN THE 1970's

The U.S. educational establishment is not monolithic. It caters to a wide variety of students. Therefore, the change in the character of job opportunities for college students, and especially persons with graduate degrees, is likely to affect different types of institutions in different ways. Hence, it appears reasonable to discuss the problems of the match between instructor and institution not in global terms, but by type of institution. The problems of training and recruiting teachers for 2-year colleges should be differentiated from those of the 4-year schools. In the case of universities, distinctions should also be made between prestige institutions which train teachers and researchers for each other or for a limited number of prestige nonacademic jobs, and those whose graduates fill a wider gamut of teaching, business, and public service positions.

The policy issues which are involved can be divided into those involving schools which have graduate departments and those which do not. First, institutions without graduate departments hire teachers who are prepared by universities. They do not train their own. Even more important, they do not have much voice in influencing the rest of the postsec-

Chart 5

SUPPLY AND DEMAND FOR PH.D's IN ACADEMIC, RESEARCH AND DEVELOPMENT AND OTHER FIELDS 1960's and 1970's



ondary sector about the type of teachers they need. There has been no consideration of their requirements in the preparation of candidates for teaching jobs. Most institutions with graduate schools, on the other hand, have generally accommodated themselves to the standards of peer institutions, without too much concern about the needs of schools upon which they look down. Up to now this accommodation has not been required of them. Their graduates have easily found suitable employment in other universities or in research. A minority of students now receive doctorates from institutions which added graduate departments

during the past decade and a half. Most of these schools granted graduate degrees to persons already employed or likely to be employed in education, other segments of the public sector, or business. Although they were more responsive to employer needs, the pressure of conforming to the patterns of prestige institutions, in order to have some of that prestige reflected upon them, has made them ambivalent about their role. The most successful new universities even managed, in two or three decades, to build themselves a reputation close to that of well-established institutions and have assumed a role which is indistinguishable from the older prestige institutions.

The greatest amount of redirection will be required in schools which train graduate students. The career paths of many of their most prized students, especially those aspiring to or being granted a doctorate, will be diffferent than in the past. These students will have to be prepared for different types of jobs.

The 2-Year College

General Considerations

The professional staffs of junior colleges are facing by far the most difficult tasks, not only because these institutions are growing fastest, but also because their function and goals are not yet fixed. The recently published *Report on Higher Education* (by the Newman Task Force) decried the present conception of the mission of junior colleges.[42] Specifically, members of the task force objected to the institutionalization of a two-track system—one for vocational preparation, the other as a "transfer" or academic program. They found that the vocational track was failing because "few [students] enjoy, excel at, or persist in academic studies" (p. 59). By contrast, they approved of the efforts of junior college educators to strengthen occupational programs, community services, and adult education. While one cannot help but agree with this point of view, their report's prescription for the 2-year colleges (i.e., having them "organized to meet the specific needs of the students they serve" (p. 60)) is far too general to be helpful. The 2-year college has to accommodate diverse entrants. Some wish to improve their preparation for the world of work, others wish to broaden their cultural preparation, and still others wish to be certificated. Without any clear direction about the role which they should perform, 2-year colleges will be facing a period of strain and confusion.

These colleges do, however, offer a chance for upward mobility to less well-prepared students. While an increasing number of highly trained, research-oriented, and highly certificated personnel will become available and seek jobs in these institutions, it is not at all certain that they are best suited to teach students in 2-year institutions. The present trend toward open-door admission is likely to result in some 25 percent of all postsecondary students coming from the high schools' lowest achievement quartile. A sizable minority of students will enter these institutions with language and mathematics skills which may not exceed those of an average ninth grader. The majority of this group will not be likely to aspire to, or last through, a full 4-year college course, and will probably be most concerned with improving basic skills and obtaining marketable technical skills. The growing criticism of 2-year colleges is that these two objectives are not pursued either concurrently or effectively.

To clarify some of the options which may be open to these institutions as they try to improve their performance, it may be worthwhile to restate some of the reasons which have been advanced for their expansion. First and foremost, they were meant to aid children of less affluent parents, children who had not received adequate preparation in elementary and secondary schools. Some students who did badly in high school might have learned more if they had been properly motivated. They were not. As they matured, they were motivated to return to school by the realization that career opportunities were closed off to them because of deficiency in skills. To better themselves, they needed to continue their studies. Most Americans believe that graduation from college, or mere exposure to college, can be translated into increased earnings in later life. Statistics to the effect that a college graduate earns $100,000 more than a high school graduate during his lifetime are commonly accepted. However, many college grad-

uates who have made higher earnings are those who, on the average, came from more affluent families and were better prepared when they entered college. Hence, part of the return of a college education is probably due to general background, and part to the connections these students possessed or acquired during their college experience which facilitated their entry into well-paying jobs.

The 1960's were unusual in American industry. Jobs for white-collar workers increased 70 percent, much faster than the total labor force. Recruiters for professional, subprofessional, and clerical positions gave preference to those with college degrees or, at least, some college experience. We are now at a turning point in terms of demand and supply for college-trained personnel. There are indications that from now on the increased capacity of postsecondary institutions is likely to eradicate all shortages of persons with college degrees. It also seems likely that the financial returns from a college education will decline.[43] Thus, those institutions which cater to the less well-prepared student may find themselves in the difficult situation of having to increase the quality of their output—if they are to maintain credibility—while redirecting the professional aspirations of their students. The twin challenge of remedial education and job orientation is likely to pose problems.

The first task of 2-year institutions is to bring the students to an acceptable level of competence in basic skills. Reading, writing, and arithmetic skills are demanded by employers, not necessarily because they are essential to the performance of a job, but mainly because they are necessary for communication and general flexibility. Currently, postsecondary institutions are not staffed to perform this function; they do not have sufficient personnel trained in remedial work. The greatest single challenge in the training of instructors for the postsecondary level will come in the field of remedial education. Remedial education has never been seriously undertaken beyond high school, and it has no set models which it can follow. Even in the elementary and secondary school systems remedial programs have had only indifferent success.

The introduction of instructional technology is most urgently needed in the area of remediation. An important difference between postsecondary remedial programs and those at the secondary level is the level of student motivation required. Postsecondary students enroll voluntarily and most want to learn. Because they are more highly motivated, it is important that they be allowed to learn at their own pace. Regimented classroom teaching techniques may discourage or repel them.

It may be preferable to train learning managers rather than teachers for these classrooms, but it is not clear where the responsibility for training such managers should lie. They might be trained in the subject disciplines, in the schools of education, or in a combination of both.

The second task of the 2-year institution is to redirect the vocational aspirations of less able students. Since many junior and community college students will not be able to compete for technical or professional careers, alternatives will have to be introduced to them. This may be what is meant by the community service function of the 2-year college.[44] It is here that adequate counseling is of crucial importance. At both the secondary and postsecondary levels, counseling generally has been most successful with academic placement for better prepared students. Vocational guidance has not been as effective. It is difficult for young people to grasp the concept of a career ladder. Youth has a short fuse. Using one job as a stepping stone to another hardly makes sense to persons who have not had any experience in the labor force.

The more successful vocational programs at the secondary level combine work with study. An exposure to real-life settings is worth more than numerous counseling sessions. In a postsecondary setting, the problems are more complex. Even though roughly one-third of all college students work part time, opportunities are circumscribed by the academic program, and in most instances are only financial stopgaps.

For large numbers of students in community and junior colleges, attendance is inspired by a desire to upgrade themselves in the labor force and sometimes to change their careers. With the exception of fairly narrow technical training for technicians in medical labs or in repair work—courses which only marginally belong in the postsecondary system—there is

no opportunity to expose students to the type of work which they may want to undertake. These opportunities must be made available through the cooperation of local business and industry.

General Education

An important, though seldom discussed function of 2-year colleges is to broaden the cultural perspectives of their students. As leisure time increases during the next 40 to 50 years (within the life expectancy of most students enrolled in college today), continuing education beyond high school must orient itself to the cultivation of avocational interests and the broadening of curiosity. To achieve what has been called "relevant" presentations of general knowlege courses, it will be necessary to depart from the general survey format now so widely used. A way of reaching these students may be to help them understand and appreciate the culture that is indigenous to their particular group or groups, if not to the United States as a whole. The promise of this approach was best verbalized by blacks in the last few years. Black students have actively demanded courses which deal with their environment, literature, history, and music. If properly presented, such courses not only will provide cultural information, but also will broaden the critical faculties of the students to appreciate other new and possibly different manifestations in the arts and in the political and social events around them.

Summary

It should be pointed out here that, as a profession, 2-year college teaching is extremely new. Back in 1960, it was estimated that some 34,000 were teaching in 2-year colleges. By 1970, the number exceeded 100,000. Roughly one-half of the total instructional personnel in 2-year schools are full-time employees. Others are mostly "moonlighting" high school teachers or persons with special skills drawn from the community. The vast majority of the full-time staff have master's degrees, with a small minority, less than 5 percent, holding Ph.D.'s. In the course of the next 10 years, another 25,000 full-time positions and probably an equal number of part-time positions are likely to open in 2-year colleges. How many of these jobs will be or ought to be filled by Ph.D.'s is debatable. Certainly there will be a sufficient number to fill the jobs. However, the 2-year college needs professionals highly trained in skills not generally emphasized in most graduate programs. It is essential that graduate programs prepare to meet the needs of 2-year colleges.

If the 2-year colleges continue to recruit their staffs from the ranks of persons with master's degrees, either new graduates or former high school teachers, then special inservice as well as preservice programs for this growing group will be called for. Inservice training opportunities for the part-time teachers in 2-year schools are also of great importance. Until now they have been the forgotten segment of our postsecondary teaching resource.

The 4-Year College Without a Graduate School

The 4-year institutions which do not have graduate departments are still in a majority in the United States, although they employ only 40 percent of all full-time faculty.[45] Most of them are either small liberal arts institutions or outgrowths of normal schools dedicated to the training of elementary and secondary school teachers. By the 1960's most prestige liberal arts colleges, such as Dartmouth, Swarthmore, Bryn Mawr, Vassar, or Union, acquired graduate departments and granted at least master's degrees, if not Ph.D.'s. During the same period many of the State higher education systems added graduate departments.

The small college without a graduate department depends on the product of the graduate schools even more than does the 2-year college. Between two-fifths and one-half of the faculties of the 4-year schools are holders of doctorates, and probably another two-fifths have master's degrees. Many holding master's degrees are candidates for the doctorate. Some eventually earn the doctorate, others do not. It is quite likely that as an increasing number of persons with doctorates become available for employment, 4-year colleges will increas-

ingly fill their vacancies with Ph.D.'s rather than hire applicants lacking doctorates and offer them an opportunity to complete their dissertations while teaching.

The more complete staffing of these schools with fully certificated persons is likely to move them further in the direction of full-fledged universities. It has been said about the latter that they are mainly channels to graduate school. This direction would probably be disastrous for the aspirations and career orientation of the majority of students in the 4-year colleges.

4-year College Students

As do a large number of enrollees at State universities, the students in 4-year colleges have limited postsecondary aspirations. Some of them enroll in college merely to get some postsecondary education, and are thus no different from 2-year college students; others aspire to and eventually obtain a bachelor's degree. During the 1960's, some 25 percent of the men and 45 percent of the women who obtained bachelor's degrees and were employed 2 years after graduation were teaching at the elementary and secondary school level.[46] The vast majority of the remainder found other professional jobs. It is interesting to note that even in the early 1960's, when college graduates could pick and choose jobs, a survey of the early careers of college graduates who reported employment as of 1963 indicated that social science and humanities majors found jobs in vastly heterogeneous endeavors. Students with these majors were most often placed in teaching, which offered opportunities for roughly 30 percent of the men and 60 percent of the women.[47]

Training and Job Prospects for B.A. Graduates

The changing environment of the job market, with the lessening of opportunities in teaching, will probably create a demand for new types of courses in 4-year colleges. In all probability these institutions will have to pay increasing attention to courses training students to fill jobs in human services, many in local, State, and Federal governments, etc. Though, in most instances, the entrance requirements for these jobs are general enough not to require drastic changes in curriculum, some contribution by the faculty may be in order to orient students to the problems handled by these agencies.

Unfortunately, the tightness of the job market for recent graduates may motivate middle-level and marginal schools to take a more limited approach. In order to make their students more attractive to prospective employers, they may reorient their curriculums to make them narrower and more vocational. Thus, if a large number of students are likely to sell insurance, it makes sense, on the surface, to teach them about the various types of insurance policies which are made available by different companies. However, such an approach is not necessarily the best one. It may not be wise to substitute for general knowledge the specific techniques which are now taught through company training courses. The result would be the shifting of the training costs of private enterprise to the public sector and the individual. It is argued here that, for the better prepared postsecondary students the narrow inculcation of techniques would be a mistake. Because of their above-average intelligence, they will prove to be valuable to their employers who will find it profitable to invest in skill training relevant to specific jobs.

State and local governments and other public agencies, on the other hand, may not invest in training as does private industry. It is in this area that specific job training may need to be undertaken by postsecondary institutions. Two disparate pressures may then be felt. In the first place, State and local government's employment requirements have been growing some 25 percent faster than has the total economy. In the second place, increasing numbers of college students have been seeking careers in public service. While in the past many students have found opportunities in teaching, the decline in the demand for new elementary and secondary school teachers is likely to disappoint as much as a quarter of the graduating seniors who seek jobs with social significance during the 1970's.

If the trend toward increased social services for the poor continues during the next 10 years, a new type of professional may be required to coordinate and orchestrate these services. The

choice of services which are available, the assurance of their continuity, and the packaging of relevant service have been fairly haphazard. For instance, while job training is done by one agency, job counseling may be done by another, job placement by a third, and followup services for marginal workers by a fourth. Expecting the poor to avail themselves of all these services presumes a degree of sophistication which even the well-educated person may not possess. With increasing awareness that poverty and deprivation are complex phenomena, job opportunities may well develop in the area of coordinating human services. If such opportunities actually obtain, a great deal of experimentation and new training resources will have to be developed for persons to fill these jobs. To a large extent, the training for these new professionals will have to be developed by the universities.

One suggested professional program for the managers of human services would consist of a mixture of courses in social sciences (e.g., economics, sociology, psychology, and anthropology), integrated with fieldwork, and practicums in settings where social services are dispensed. Starting with the sophomore year, the program would include fieldwork. In succeeding years, the students would be rotated among a number of institutions: the schools, where they could participate in highly structured coaching programs; the home, where demonstration programs of cognitive child development and good nutritional patterns would be given *in situ;* recreation and adult training centers, health centers, and well-baby clinics. In the later phases, the students should not act as observers, but be employed as demonstrators. The fieldwork would become increasingly demanding as students become thoroughly immersed in the diagnosis of an area's social pathology. They should not only administer tests and discuss the results, but should assist also in what is commonly known as "casework," following up the progress of a group or a family. Concurrently with the fieldwork, the program of social studies should be continued, with the students going from the general introductory courses to more specialized courses. These courses would fit in very well with the advocated broader, nonprofessionalized bachelor's degree program. While the attraction and the use of the program will probably be limited to a small segment of students, not exceeding 10 percent of the total enrollment in undergraduate programs, such a program might well be a worthwhile undertaking for universities.

Changes in Faculty Preparation for the 4-Year College

The preparation of teachers to staff liberal arts colleges involves a myriad of problems. The values of most liberal arts 4-year schools are fairly close to those of the universities. Their staffs consist of persons with doctorates or persons who are candidates for the doctorate. By contrast to the environment in the universities, however, the majority of the staff in the 4-year college is not engaged in research. Hence, the major share of the content of the doctoral program, which consists of training in research, is scarcely utilized by 4-year college faculty. The seriousness of the gap between training and job requirements is illustrated by the fact that 85 percent of those who received Ph.D.'s have never published.[48]

On the surface, it would appear that the doctor of arts degree, which substitutes some training in teaching for research, may meet the requirements of these schools; but this is only a partial answer to the problem. It would be desirable to fill the 50,000 or so new positions in undergraduate schools, probably two-thirds of which will open in 4-year schools, with teachers who are (1) aware of the importance of their discipline's contribution to young people's lives, and (2) aware of the job requirements in the real world. These two points need some elaboration because they are subject to varying interpretation. When discussing the contribution of a given discipline to a curriculum, it is fashionable to argue that the courses must be "relevant." This implies, if one takes the dictionary definition of the word, that college courses in English, sociology, or anthropology should limit themselves to treating topics of immediate use or congenial to the existing interests of undergraduates.

This argument, however, ignores the objectives of a liberal education. As a matter of course, many schools have already made this

decision, consciously or otherwise. Elite institutions and those which are trying to imitate them have designed the undergraduate curriculum as a stepping stone to graduate school. Courses have been replete with facts and techniques. The more general survey courses, whether in social thought or civilization, have fallen into disregard. Many schools have abandoned them, both because teachers disliked teaching them and because students were not interested in taking them. The whole question of the contribution of survey courses to liberal education needs to be reevaluated. To what extent is their unpopularity due to the way they have been taught, rather than to the subject matter covered? As narrow scholarship has become a sure ticket to advancement in the academic community, the disappearance of the generalist from college faculties has contributed to the declining popularity of survey courses.

The hundred thousand or so new teachers of undergraduate students in 4-year institutions and universities will have to resist falling into three traps: (1) They must not succumb to the temptation to provide low-level technical training to fit their students for the boring jobs which they will have to fill before they get a chance to climb the career ladder; (2) They must not imitate high-prestige institutions in shaping their curriculums solely to the preparation of students for graduate school, since the opportunities for persons with graduate training are likely to be less promising than those for persons with bachelor's degrees; (3) They must not continue to train students only for today's jobs, many of which will disappear. Instead, they should prepare students for new careers in human services, where more job opportunities are likely to materialize.

Undergraduate Training in Universities

Planners of undergraduate programs in the universities must distinguish between the problems of students in many State universities and those of students in prestige schools (some of them State universities), as these two types of schools cater to different types of student bodies. In most State universities, such as Ohio State, Indiana, and the like, much of the undergraduate student body is trained for careers in teaching. The problems of their undergraduate departments are not very different from those of the 4-year colleges. On the other hand, the prestige institution, e.g., Harvard, Chicago, or the University of California at Berkeley, may face the most severe problems in reorienting their curriculums to meet the challenge of the 1970's. In the 1960's these institutions directed their efforts to the development of scholars and potential entrants to professional schools. If the outlook previously outlined for employment in the 1970's proves correct, and if the trend toward completing one's education at the bachelor's level continues, the training patterns for the intellectual or at least the academically achieving elite will have to change drastically.

The *Report on Higher Education* cataloged a large number of failings of the present university system. It mentioned, among other student complaints, objections to the "rounded curriculum and course requirements for which (students) have absolutely no interest." [49] However, the report then went on to argue against forcing students to choose a major early, "without having any idea what historians, biologists, or physical scientists do in the world, or how various people in various occupational roles utilize the skills these disciplines provide." [50] The task force which prepared the report did not propose a solution to this dilemma, but recommended increased attention to learning by doing.

It could be argued that the elite institutions should shape their curriculums with greater care because they impose their patterns not only through prestige and example, but also because they train large numbers of post-secondary teachers. Ever since Herbert Spencer asked, "What knowledge is of most worth?" the fundamental content of education has been widely debated. Some 5 years ago the objectives of education were restated once again by John R. Platt, whose call for diversity was "interpreted as a plea to discover what kind of education will produce, in all men, the greatest inventiveness, the greatest willingness to undertake intellectual endeavour, the greatest capacity to combat the commonplace and repetitive." [51]

Examined in this light, the content of the undergraduate curriculum appears less im-

portant than its form. It may be more important to define how to study rather than what to study.

The choice of appropriate methods to help students understand the interrelationship of social forces, the development of doctrine, and the growth of scientific discipline, for example, goes to the very heart of the process of training teachers. Especially in the humanities, where recently the concern has been to define and describe the creative process rather than to evaluate the impact of creativity upon social forms, the format and content of courses have increasingly focused on classifying art forms rather than on their meaning. In the social sciences, the increasing sophistication of methods has led to the result that most courses deal with techniques rather than with the substance and relevance of different policies.

The university now suffers from a flight from ideology to methodology. This change in emphasis has withered a principal function of higher education: i.e., to train students for leadership and decisionmaking. The increased sophistication in most disciplines has helped scholars and teachers understand the unintended consequences of actions. This, in turn, his made the university less prescriptive, less controversial, more oriented to methodology and to the exposition of facts. The up-to-date professor is likely to restate the Golden Rule in George Bernard Shaw's terms: "Do not do unto others as you wish them to do to yourself, they may have the same tastes." This attitude cannot help but make undergraduate teaching duller and less appealing to students. Thus, the elite universities and colleges are faced with the challenge of reexamining the possibility of creating programs for social and scientific leadership. The curriculum for managers of human services mentioned previously is one such program. Another opportunity lies in a rigorous interdisciplinary program of studies. While the *Report on Higher Education* decries the college's failure to create interdisciplinary programs, this failure is understandable if one looks at the dynamics of postgraduate education and its linkages with the curriculum at the bachelor's level. While the Federal Government has encouraged interdisciplinary programs at the graduate level, those programs did not prove popular since there was little demand for teachers with those skills at the lower levels of postsecondary education.[52]

To summarize, at the prestige colleges and universities teachers will have to be increasingly aware of the purposes of their disciplines. They will have to be trained or retrained to orient the undergraduate courses toward problem solving, rather than toward the acquisition of facts and attitudes to meet the requirements of graduate or professional schools.

The Evolution of Graduate Education

While changing demand conditions are likely to affect roughly one-half of the student bodies of undergraduate schools, the graduate establishment is likely to feel the change in economic conditions even more drastically. Thus, the character of the master's degree program will have to change quite dramatically and the orientation of Ph.D. programs will require realignment according to the employment opportunities which will be available.

The Master's Degree Program

While there is a great deal of soul-searching about the content and the size of Ph.D. programs, the master's program has received much less attention. This is the more surprising since for every Ph.D. awarded, seven master's degrees are conferred. Yet, strangely enough, the master's program has been increasingly deemphasized by most prestige schools, and without their leadership it has not changed dramatically elsewhere. In prestige universities the master's degree is often a consolation prize to those graduate students who are deemed to fall short of the ability required for a Ph.D., especially in the physical and social sciences. In some other schools it is a stopping-off point on the way to a Ph.D. However, in the professions the master's degree is a necessary certification for specialization. In such endeavors as business, social work, and teaching, it is increasingly becoming a prerequisite for tenure in professional jobs. In many cases, the "tools of the trade" are taught at the graduate level, and undergraduate preparation is thereby rendered less important.

Thus, any liberal arts or science training has come to be considered adequate for admission to a master's program in business administration or teaching. Finally, a number of schools have specialized in granting master's, but not doctor's degrees, while in the certification of their students little distinction is made between the bachelor's and master's programs. Many of these master's degrees are obtained by participating in evening programs.

During the 1960's some attempts were made to modify the curriculums for professional or "mass-produced" master's degrees. A grant from the Ford Foundation helped numerous business schools reexamine their programs. As a result, their programs became oriented less to "nuts-and-bolts" and more to teaching decisionmaking techniques. A similar reexamination led to changes in the master's degree in education. A case in point is the introduction of the master of arts in teaching, with greater emphasis on study of the social sciences and less on educational techniques. In schools of social work, notably at Brandeis, Columbia, and California (Berkeley), greater emphasis has been placed on understanding the social pathology and psychological problems which students may have to deal with in day-to-day contacts with welfare clients. By contrast, the mechanics of social work have been deemphasized. These changes have not been accepted widely, nor have they been greeted with universal and unreserved approval. While the new master's programs made it easier for some students to go on to doctoral work, they have not been approved by all employers. Established businessmen considered the "new" M.B.A. candidates too theoretical, too interested in testing hypotheses about business behavior, and not versed enough in making *ad hoc* decisions. In some cases, teachers prepared by the new programs knew little about the real world, and newly trained social workers were more interested in solving the problems of society than in calculating welfare clients' eligibility for benefits. In a seller's market, where the number of college graduates fell short of or was equal to the number of jobs, the employers grinned and bore it. In a buyer's market, employers may well shun the products of the more innovative programs.

During the 1970's, the pressures on the master's programs will be great. On the one hand, many ambitious students will opt to continue in school through the master's degree in order to ensure employment in a job with professional content. On the other hand, employers will be more choosey, often giving preference to students who are trained specifically for a given job. While the students will be demanding training for high-level jobs, the employers will be expecting more specific training for positions at the bottom of the professional ladder. The master's degree will become increasingly a professional degree, even in the sciences. If the employers win, we are likely to witness a much greater emphasis on midcareer training as managers, or employees on the verge of promotion and returning to school to learn about new techniques applicable to their fields. While most of these new customers for graduate programs are not likely to be able to afford the time to earn a Ph.D., the courses which will suit them best will resemble those being given to Ph.D. candidates.

Currently most evening programs are devoted to courses with more professional than theoretical content. There have been some signs (e.g., the executive program at the School of Business, University of Chicago) that programs with largely theoretical content may have some appeal to the more upwardly mobile members of the private sector. If such programs catch on, they will have interesting implications both for the demand for and the training of postsecondary teachers.

In line with more emphasis on midcareer training, the professionalization of master's degrees in all fields, including the sciences, is likely to be quite pronounced. If this occurs, the nature of teaching at the immediate postgraduate level will have to become more pragmatic. Teachers there will have to possess a combination of teaching experience and high technical skill. Thus, the patterns of entry into the lower levels of graduate work in the 1970's may be quite different from the 1960's. The recruitment of part-time teachers, and of persons with experience in research and development or in practical work settings, is likely to be encouraged. Young Ph.D.'s may be forced to take their first jobs in industry or government before qualifying for lower level graduate teaching jobs.

The Ph.D. Training Program Reconsidered

Currently the graduate establishment is largely dominated by professors with impressive publication records who attempt to train students in their image. Graduate schools which have gained considerable prestige in the United States since the beginning of World War II have been organized mainly on the German pattern. Research has been emphasized as the principal tool for training prospective scholars. In many ways the Ph.D. program has been considered an apprenticeship, practically monastic in character. Jencks and Riesman have characterized the atmosphere of Ph.D. programs as being essentially defensive against the pressures of the outside world. They stated that the "faculty mostly concluded that the laity was beyond redemption, that stringent efforts were needed to prevent subversion of the academy by pragmatism." . . .[53] Jencks and Riesman have also noted that reviews of the Ph.D. training process by government panels, task forces, private commissions, and committees "all formulated their recommendations on the assumption that the Nation's leading graduate schools were in pretty good shape and that America's educational problems were those of quality control further down the academic line".[54] Anyone with even a fleeting contact with the Ph.D. training process cannot help but agree with Professors Jencks and Riesman. The Ph.D. training process until now has varied from school to school, not by design but because of circumstances. If certain schools adopted a more pragmatic approach to the training of Ph.D.'s, this was usually not as a result of a conscious decision to deemphasize pure or applied research but because the research facilities were lacking. In certain cases the failing was laid at the door of the faculty, and administrators tried to remedy the shortcoming by hiring additional researchers.

Labeling the function of the graduate school as that of serving the undergraduate institutions, the research establishment, or even business and industry goes very much against the grain of the academic tradition. Considerable scorn is vented on departments that have close associations with government and industry. The applied research they perform is considered well beneath the work of departments which do either pure research or research which is not directly commissioned by a client.

In the light of these circumstances, the refurbishing of the Ph.D. program to meet the new conditions of market demand for Ph.D.'s will be nothing short of traumatic. During the halcyon days of the 1950's and the 1960's, when doctorates were in high demand, American graduate schools kept training researchers even though the vast majority of the graduates never published. Since no link was established between effective teaching and good research, this state of events was considered satisfactory. Candidates for a Ph.D. degree received considerable exposure to different facets of their chosen field, took comprehensive examinations, wrote their theses, and were exported to the real world where they were eagerly snapped up. The graduate schools, however, skimmed the cream of their output, either placing prize students in the university undergraduate program till an opening occurred on the graduate faculty, or retaining them in research or postdoctoral programs. As long as the rest found respectable jobs, all was well.

In the 1970's conditions are changing radically. It is quite likely that some outstanding graduates can no longer be retained in suitable academic settings. Under those circumstances, it is quite likely that members of graduate faculties will change their attitudes toward the outside world. During the last decade, they have had increasing exposure to it, either through their contacts with public authorities in the matter of research grants or through involvement in advisory capacities in the private sector. It is not unlikely that they will try to prepare promising students for positions in these areas. On the other hand, it is less likely that much attention will be paid to preparing either junior college teachers, teachers of undergraduates in other 4-year schools, secondary school academic leaders, or school administrators. These are low-prestige occupations in the eyes of graduate faculties.

In all probability it is more realistic to look to less prestigious institutions to pick up the challenge of training postsecondary teachers. Research is not emphasized as much in these universities and the Ph.D. process can be more

easily converted to the training of specialists who want to continue learning but are not necessarily interested in contributing to knowledge. From this point of view the research component of the doctoral program can take on the important function of developing students' ability to assimilate new findings throughout life.

It is unfortunate that the doctor of arts degree was introduced so late, and so often in the wrong places. This degree, which puts more emphasis upon preparation for teaching and generally dispenses with the thesis, would have been a boon had it been invented in the 1950's. In the 1970's, however, with the plethora of highly certificated Ph.D.'s, it will always carry the stigma of "a cheap doctorate." Generally, the doctor of arts degree programs were funded at prestige institutions. The practice teaching also took place in the universities where the program was conducted. Thus, the doctor of arts candidates did their practice teaching in classrooms filled with academically well-prepared students. In all probability, they would later take jobs in junior colleges and lower prestige 4-year schools where the students are completely different.

Impact on Graduate Faculties of Changes in Demand

The readjustment of the graduate faculties in the 1970's will have to come about not only as a result of the projected surplus of Ph.D.'s but also because of the financial crisis in higher education. During the 1950's and 1960's, graduate faculty positions were considered to be the zenith of academic life. Teaching schedules were light; the graduate faculty, which accounted for 15 percent of the total postsecondary faculty, taught less than 8 percent of the total class hours. Research money in the physical sciences and, to a lesser degree, in the social sciences was readily available. Part of the graduate student faculty outlays was covered by research grants. Graduate-level professors in prestige institutions complained that they worked extremely hard because of their research load and their responsibility for supervising graduate students. However, much of their activity was self-starting. They chose research topics which interested them, and then assigned thesis topics dealing with some facets of these subjects to their graduate students. Their work then contributed to the research and helped the professors gain additional prestige with their peers in the same discipline.

With research moneys becoming scarcer (i.e., with Federal grants to colleges and universities growing only as fast as the gross national product), and with the cost of research escalating, these departments will have to reappraise the activities of their graduate faculty. Some prestige universities such as Harvard, Princeton, and Wisconsin are taking steps to reduce the size of both the graduate faculty and the gradute student body. At the State university level in a number of States such as California, Michigan, and New York, State legislatures are acting to increase the teaching load of graduate faculties. Other university administrators are caught on the horns of a dilemma. On the one hand, they would like to offer low teaching loads and pleasant working conditions to attract faculty who will bring prestige; on the other hand, they are trying to balance their budgets. In some large university systems such as California, attempts have been made to centralize the offering of graduate degrees in certain disciplines on a limited number of campuses; so far this has been unsuccessful.

The tradition of low teaching loads for graduate professors is under pressure from other quarters as well. There was little hope of increasing teaching loads for graduate faculties in the natural sciences while professors were heavily subsidized by outside research grants. Academic tradition required that teaching loads in all graduate schools be equal, so despite the fact that professors in the humanities and the social sciences received very little outside research support, their teaching loads were not heavier than those in the natural sciences. With natural sciences research moneys likely to play a smaller role in the university budgets, it is quite probable that teaching loads will go up for everybody. In addition, teaching loads may go up as the bargaining power of graduate school professors declines. Positions are becoming more and more scarce. Finally, if the master's program becomes a professional training program,

the presence of a lower status or lower rated graduate faculty may induce administrators to increase teaching loads—especially members of this new faculty who are recruited from research and development or private industry, because they are less likely to object to longer hours and harder work.

Policy Issues in Graduate Education

It would not be difficult to make policy recommendations if postsecondary institutions were homogeneous. The prescription then would consist of limited support to a selected number of prestige institutions which would produce highly gifted and well-trained manpower. Unfortunately, the issues are not so clear-cut. In the first place, postsecondary institutions have students at varying ability levels. Secondly, students attend both undergraduate and graduate schools with a variety of goals in mind. Some attend to broaden their perspective, others to obtain marketable skills, and still others merely to acquire degrees. The tolerance of the postsecondary institutions toward a variety of student goals has not made it any easier to shape a policy for the training of future teachers. As long as there is an implicit belief that everyone can benefit from any postsecondary education under any circumstances, the problems involved in postsecondary personnel training will be difficult to resolve. This attitude will have to change as the variety of students, their orientation, and their career goals become increasingly diverse. The realization that not all postsecondary teachers have to be trained as researchers is a necessary first step. Most first-line schools, and a number of others aspiring to this status, are not interested in graduating teachers for low-prestige institutions. Lower ranking schools may be interested in performing this function but do not know how to do it.

The challenge at the Federal level is to develop models of graduate education which will be more closely oriented to the market demand. Students with below-average attainment in high school will attend colleges in increasing numbers and will require special curriculums and intensive remedial techniques to help them achieve at the level expected of college students. Because of the changing character of the demand for educated personnel (from more preschool teachers to trainers of members of new occupations, such as the managers of human services already described), the Federal interest in developing effective programs for new teacher trainees should not be underestimated. Thus, while the consensus today is that physical scientists and humanists are certainly going to be in excess supply in the 1970's, and that career patterns for social scientists during the next decade will follow quite different paths from those available to graduates in the 1960's, there may still be pockets of shortage occupations. With surpluses in many areas, it is reasonable to think of graduate faculties as a resource for retraining as well as training.

This shift in the orientation of graduate schools is not going to come about unless the whole degree structure is reexamined. The possible need to restructure the master's degree and make it a program for professional preparation has already been discussed. If this suggestion were adopted, the ability of graduate schools to gain the type of expertise needed to retrain people in midcareer would be greatly enhanced. The professionalization of the master's program complements the suggestions of the Carnegie Commission to shorten the period needed to earn a bachelor's degree. The argument of the Commission that great strides have been made by American high schools during the past decade or two and that impatient freshmen are irked by the repetition in college of high school subjects is well taken for roughly one-half of the freshman class. These students are probably better prepared than ever before, and for them it would make sense to shorten the period required for the first degree. Such a course, however, would not be appropriate for the other half of the freshman class. They are probably less well-prepared academically than comparable freshman of 10 years ago. For these students it may not be possible to shorten the 4 years used to acquaint students with culture, society, art, and literature, while at the same time orienting them to a vocation and instilling marketable skills. Only if the vocational components were eliminated could the curriculum be shortened without further depreciating a degree which is losing value already.

For the young people whose attendance at

postsecondary institutions is a declaration of independence from the career paths of their parents, the postsecondary system must assume an awesome burden. Currently most teachers are not up to it.

Postsecondary teachers start out as brilliant students in high school, good students as undergraduates, meritorious graduate students, and finally Ph.D.'s. Generally they have very little experience of what the world is all about. How can they then tell their students about the probable paths to different jobs? How can they counsel their students about matching future opportunities to their abilities? Anyone who reads the job descriptions in *The Occupational Outlook Handbook* published by the Bureau of Labor Statistics, U.S. Department of Labor, comes away with exactly the correct impression of what the world of work is all about. It is a world of drudgery, of occupations requiring detailed attention to repetitive tasks. How can those descriptions motivate the young man to choose occupation A rather than occupation B? Most people do not know and neither do most teachers. The solution to the career guidance problem has not been found. Suggestions have been made to integrate more closely postsecondary education with job experience. In fact, about a third of all postsecondary students work either part time or full time. Yet, in the majority of cases their day-to-day jobs have very little relationship to the career they plan to follow after graduation.

It is paradoxical that the value of a postsecondary education for entrance to jobs with professional content makes it difficult for students to obtain good jobs while they are studying. The certification requirements, necessary or arbitrary, for certain jobs mitigate against apprenticeships concurrent with education. Furthermore, in a number of large companies where aspiring professionals are trained for periods as long as 2 years, there is obvious reluctance to invest in the training of highly mobile college students. During a period when the supply of college graduates is great, innovation in training patterns is not likely to be introduced.

It is left to postsecondary teachers, then, to carry out the orientation of students to the career world. In the absence of existing workable patterns, experimentation with alternative models may be the order of the day.

The objectives of higher education in the United States are so varied that they are not likely to be achieved by a single group of teachers or with uniform training. Probably a diversity of teaching can only be produced if the diversity of teacher-training institutions is maintained. As the discussion about career opportunities for highly trained personnel escalates, as Ph.D.'s are forced into less prestigious jobs, new challenges to define missions will confront postsecondary institutions.

FOOTNOTES

1. The American Association of Colleges 1967–68 survey reported that on 13 percent of the campuses surveyed there were organized protests against the poor quality of instruction. Wimpress, Charles Duncan, "Commission on Students and Faculty," *Liberal Education*, March 1969.
2. U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P–20, "Educational Attainment, March 1950," *Idem*, "March 1970."
3. U.S. Department of Health, Education, and Welfare, Office of Education, *Biennial Survey of Education in the United States*, various years; U.S. Department of Health, Education, and Welfare, Office of Education, *Projections of Educational Statistics, 1978–79*, 1969 edition, p. 18.
4. U.S. Department of Health, Education, and Welfare, Public Health Service, *Vital Statistics of the United States*. Washington: U.S. Government Printing Office, Annual Reports.
5. *Projections, op. cit.*, table 20.
6. Joseph Froomkin, *Aspirations, Enrollments and Resources*, U.S. Department of Health, Education, and Welfare, Office of Education. Washington: U.S. Government Printing Office, 1970. Chapter 2, p. 14 ff.
7. *Ibid.*, p. 2 .
8. *Ibid.*, table 3–1, p. 30.
9. *Ibid.*, p. 50; cf. *Projections, op cit.*, table 8, p. 25.
10. These degrees exclude first professional degrees, such as the LL.B., J.D., or M.D. For alternative projections for undergraduate enrollments only, see *Aspirations, op. cit.*, chapter 3. Degree data from *Projections, op. cit.*, table 21, p. 41. For total number of persons with advanced degrees, see footnote 2. The discussion of the supply of doctorates in this paper does not include professional degree production.
11. U.S. Department of Commerce, Bureau of the Census, *Historical Statistics of the United States*, p. 211; *Current Population Reports*, "Educational Attainment, March 1970," Series P–20, #207; U.S. Department of Health, Education, and Welfare,

Office of Education, *Projections of Educational Statistics to 1978–79*, p. 41; U.S. Department of Health, Education, and Welfare, *Vital Statistics of the U.S. 1967*, Vol. II, Section 5, Life Tables, table 503.

12. U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, Vol. 17, No. 8, February 1971, p. 36.
13. U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, "Educational Attainment," March 1959, March 1964, March 1969, March 1970, Series P–20, Nos. 99, 138, 194, 207.
14. U.S. Department of Health, Education, and Welfare, Office of Education, *Students and Buildings*. Washington: U.S. Government Printing Office, 1968, p. 41.
15. *Projections*, *op. cit.*, pp. 25–30.
16. *Ibid.*, p. 25.
17. Estimates from Joseph Froomkin, "New Directions in Higher Education," an unpublished report to the Russell Sage Foundation.
18. *Projections*, *op. cit.*, p. 34.
19. Gus W. Haggstrom, "The Growth of Graduate Education in the Post-Sputnik Era," an unpublished report for the Carnegie Commission on Higher Education.
20. Allan M. Cartter, "Scientific Manpower for 1970–1985," *Science*, Apr. 9, 1971, p. 132 ff.
21. National Science Foundation, *1969 and 1980 Science and Engineering Doctorate Supply and Utilization* (NSF 71–20). Washington: U.S. Government Printing Office, 1971.
22. Joseph Froomkin, "Approaches to Forecasting Demand of College Graduates and Ph.D.'s," a paper prepared for American Association of Universities, March 1971, summarized in *Newsletter* for The Science and Public Policy Studies Group, May 1971.
23. Office of Management and Budget, *Special Analyses, Budget of the United States, Fiscal Year 1971*, p. 125. Washington: U.S. Government Printing Office, 1970.
24. Robert Rinebold, "Recent Graduates of Harvard Found Taking Manual Jobs," *New York Times*, Mar. 3, 1971. For the situation in Chicago, see Chicago *Crimson*, June 4, 1971.
25. Number of teachers estimated from Current Population Survey, P–20, March 1970, *op. cit.*, and total number of persons employed with 4-years of college, *Special Labor Force Report No. 125*, unpublished tabulations. Projections based on growth by major occupation group and share of college graduates in each consonant with Bureau of Labor Statistics, estimates.
26. Sophia C. Travis, "The U.S. Labor Force: Projections to 1985," *Monthly Labor Review*, May 1970, p. 4, reprinted as Special Labor Force Report 119 with supplementary tables; Proportion of persons with 4 or more years of college: for 1970, U.S. Department of Labor, Bureau of Labor Statistics, *Educational Attainment of Workers*, Special Labor Force Report 125, and unpublished tabulations; for 1960, U.S. Department of Commerce Bureau of the Census, *United States Summary*, PC(2)7A, pp. 116–129.
27. National Science Foundation, *1969 and 1980, Science and Engineering Doctorate Supply and Utilization*, *op. cit.*, p. 28.
28. *Projections*, *loc. cit.*, see footnote 15.
29. National Science Foundation, *op. cit.*, p. 13.
30. These projections are based on trends in participation rates and U.S. Bureau of the Census, *Current Population Reports*, Series P–25, No. 448, "Projections of the Population of the United States, by Age and Sex (Interim Revisions): 1970 to 2020." Washington: U.S. Government Printing Office, 1970. Table 2, series E.
31. Special projections made for the President's Commission on School Finance.
32. National Education Association, Research Division, *Teacher Supply and Demand in Public Schools, 1970*, Research Report 1970–R14, Washington, D.C., 1970, p. 53.
33. Denis F. Johnston, "Education of Adult Workers: Projections to 1985," *Monthly Labor Review*, August 1970, reprinted as Special Labor Force Report 122, U.S. Department of Labor, Bureau of Labor Statistics, 1970; Neal H. Rosenthal, Janice N. Hedges, "Matching Sheepskins with Jobs," *Monthly Labor Review*, Volume 91, No. 11, November 1968, p. 10.
34. Based on projections prepared by Joseph Froomkin for the President's Commission on School Finance.
35. Laure M. Sharp, *Education and Employment, The Early Careers of College Graduates*, chapter 4, p. 39 ff., The Johns Hopkins Press, Baltimore and London: 1970.
36. Estimates based on Joseph Froomkin, "Ph.D.'s in Science and Engineering in the 1980's," a report submitted to the National Science Foundation, July 1970.
37. Charles V. Kidd and Dael Wolfle, "The Future Market for Ph.D.'s." (This article will appear in *Science*.)
38. These estimates are based on James F. Rodgers, *Staffing American Colleges and Universities*, Office of Education, Department of Health, Education, and Welfare, Washington: U.S. Government Printing Office, 1967; Allan M. Cartter and Robert L. Farrell, "Academic Labor Market Projections and the Draft." *The Economics and Financing of Higher Education in the United States*, Joint Economic Committee, Congress of the United States. Washington: U.S. Government Printing Office, 1969; U.S. Department of Health, Education, and Welfare, Office of Education, *Numbers and Characteristics of Employees in Higher Education*, Fall 1966 and Fall 1967. Washington: U.S. Government Printing Office, 1969 and 1970.
39. Joseph Froomkin, "Ph.D.'s in Science and Engineering in the 1980's," *loc. cit.* Also see footnote 38.
40. National Science Foundation, *op. cit.*, appendix C, p. 28.

41. Cf. National Science Foundation, *loc. cit.*, Cartter, *Science, loc. cit.*
42. Frank Newman, Chairman et al., *Report on Higher Education*, U.S. Department of Health, Education, and Welfare, Office of Education. Washington: U.S. Government Printing Office, 1971.
43. U.S. Bureau of the Census, *Current Population Reports*, Series P–20, No. 201, "Characteristics of Men with College Degrees, 1967," Washington: U.S. Government Printing Office, 1970, p. 22.
44. See *Report on Higher Education, op. cit.*, p. 58.
45. *Numbers and Characteristics of Employees in Higher Education, 1967, op. cit.*, p. 14.
46. Sharp, *op. cit.*, p. 71.
47. *Ibid.*, p. 40.
48. This is a widely cited figure most recently mentioned in a report to The Ford Foundation by Public Policy Research Study under the guidance of Alex Mood, University of California (Irvin).
49. *Report on Higher Education, op. cit.*, pp. 19–20.
50. *Ibid.*, p. 20.
51. Wayne C. Booth, ed., *The Knowledge Most Worth Having*, The University of Chicago Press, Chicago and London, 1967, p. x.
52. *Report on Higher Education, op. cit.*, p. 36.
53. Christopher Jencks and David Riesman, *The Academic Revolution*, Doubleday and Co., Garden City, N.Y., 1968, p. 514.
54. *Idem.*

CHAPTER 2

A Case Study of the Qualitative Need for Teachers

The purpose of this case study is to suggest answers to three basic questions about the need for educational personnel:

—How do school districts decide upon the effective demand, the quantity, and the quality of educational personnel they try to obtain?
—What is the relationship between educational staffing demand thus determined and educational needs of students?
—What is the qualitative and quantitative adequacy of educational personnel at school districts?

In addition, the study investigates the reasons behind the answers to these questions and possible steps that might be taken to alleviate problems.

Visits were made to 10 school districts which are representative of the range of U.S. school districts in terms of important variables. For purposes of this study, educational personnel were defined to include both classroom teachers and ancillary personnel, such as guidance counselors and teacher aides, but not administrative personnel.

The following conclusions resulted from the visits:

1. The 10 districts visited felt their staffing patterns had only partially succeeded in meeting the educational needs of students, as each district defined those needs. It was found that school district programs and policies were usually determined more by what was financially expedient or possible than by what was educationally needed to meet the needs of students.

2. Some of the major reasons behind districts' failures are:

—There is little assessment of present or future educational needs. As a result, there often is little correlation between success in filling staffing requirements and success in filling the actual educational needs of students. This is a factor that has received little consideration in many previous studies of school personnel staffing practices and policies.
—Even when needs are assessed, there is insufficient involvement of teachers, students, parents, and community in the assessment process and in the translation of needs into programs.
—There is little evaluation of current programs in light of student needs; modification of present programs and introduction of new programs are infrequent.
—Staffing demand is based primarily on current staffing patterns and there is little experimentation with alternative staffing patterns.
—Most of the districts were facing severe budgetary constraints due to inflation. Only two of the 10 had any prospects of obtaining additional funds, partly because of the present recession and high unemployment, both of which affect the public's willingness to vote additional tax levies. Furthermore, most districts had very little flexibility in the allocation of their funds.

3. Every district indicated that some positions were filled with teachers who did not

meet the district's quality criteria. The blame for this situation was divided:

—Teacher preparatory institutions (TPI's) were faulted by interviewees for not stressing sensitivity and responsiveness to individual student needs, for not preparing middle-class trainees with tools for dealing with inner city environments and alien cultures, and for not teaching such "basics" as how children learn to read.

—Also, as a result of tenure systems and insufficient inservice training, many teachers who were once responsive to the educational needs of their students lost all contact with the needs of their students and may, in fact, no longer be in touch with current developments in teaching methods.

Most frequently expressed quality shortages are of teachers who have positive attitudes toward students, and who are oriented to individual student needs and interests rather than subject matter, flexible in approach, willing to experiment, open to change, and sensitive to other cultures.

4. In most of the districts, quantitative shortages exist. These shortages vary from district to district, but certain patterns are evident:

—Shortages due to the demand-decision process—the process whereby a district prepares its budget and staffing plans—involve primarily staff other than classroom teachers. Several contributing factors can be isolated: the priority given to classroom teachers (ancillary staff requirements are often met only through the use of Federal and State funds or other nondistrict community resources), lack of experimentation with alternative staffing patterns, failure to involve a broad spectrum of individuals in needs assessment, and insufficient or nonexistent evaluation of programs.

—The most frequently mentioned shortages due to the demand-decision process involve the following positions: teacher aides, special education teachers, psychologists, guidance counselors, elementary physical education teachers, elementary art teachers, elementary music teachers, teaching consultants, and librarians.

—However, there were shortages in three important categories of classroom teachers, which were associated with an insufficient supply rather than with the demand-decision process: male elementary teachers, black and Chicano teachers, and bilingual teachers. In the last two of these three categories, the schools could be faulted for having a white middle-class orientation and for not meeting the needs of students who drop out or do not "succeed" in school, thus making these students ineligible to become teachers. Salary differentials, role stereotypes, and competition from industry are faulted for shortages of male elementary teachers.

—In addition, shortages in supply, coupled with insufficient recruiting attempts, led to unmet needs for the following: reading specialists and diagnosticians, elementary and remedial mathematics teachers, industrial arts teachers, vocational education teachers, and science teachers.

5. Approaches to filling these gaps varied widely from district to district and within districts. Volunteers and paraprofessionals helped alleviate demand shortages; lower quality (often uncertified) teachers were substituted for desired staff; teachers in oversupply areas were "retrained" for shortage areas; and TPI's in some instances were approached to change training methods, priorities regarding shortage areas, etc. Often, unmet needs were not alleviated; some classes were discontinued in the face of personnel shortages; and in the case of shortages due to the demand-decision process, students went without the services of the personnel in question (psychologists, for example).

6. Among the school districts visited, the one which appeared to be most effective both in meeting educational needs and in staffing its district appropriately was School District A. Other districts were working toward these goals. Where districts were closest to the ideal, schools were moving toward student-oriented educational teams, integrating administrators, teachers, specialists, and aides. These teams were set up to provide individualized instruction based on specific identifiable student needs. Further, teams were organized to make the

best possible use of the skills and capabilities, as well as motivations, of individual teachers.

The aforementioned conclusions imply that:

—The school districts visited should incorporate the following operational philosophy: systematic program planning and evaluation; a broader participation of the various parties affected in the assessment of needs (as well as mechanisms for resolving conflicts among these groups); and improved communication and coordination with the training personnel and programs of TPI's.

The TPI's, in turn, should do more to disseminate research information on improved teaching methods and innovations to the district administrators and teachers. Professors at the TPI's should spend more time observing everyday problems in district classrooms while the institutions should make more use of superior classroom teachers as instructors on their campuses.

—The Federal Government should intensify its efforts to fund and publicize effective models for inservice and preservice training. Additional research should be undertaken to identify student educational needs and staffing and organizational patterns to better satisfy these needs.

In this study there is an emphasis on the *process* that underlies teacher supply and demand. In each district, an attempt was made to find out:

—What happens
—Who makes it happen
—How it happens
—Why it happens

A conceptual framework was then developed to tie together the findings and conclusions.

A key concept in the framework was that of *need*, defined here as a condition in which services must be provided to students in order to help them maximize the development of their academic, social, psychological, and physical potential in ways that will foster their achievement of educational goals held by the students themselves, by educators, and by segments of the community. Needs are dynamic, changing with socioeconomic conditions, with student body compositions, with community values, and in response to education itself.

It was determined that there are three processes which directly affect supply and demand of teachers: the demand-decision process, the supply process, and the staffing process.

The demand-decision process includes those steps that take place within a school district to enable decisions to be made regarding the staffing levels which the district will attempt to fill. These steps are:

—The formulation of preliminary district planning guidelines, which include: the budget forecast, enrollment forecasts, and policy objectives.

—The development of individual school budget requests embodying program/staff plans. These include: perception, assessment, and communication of educational needs; design and/or modification of program and staffing configurations; establishment of priorities in consideration of fiscal constraints; and completion of the final school district budget.

The outcome of this process is the *effective demand*. Ideally, an important input is an assessment of needs and an evaluation of how well present programs, policies, and curriculums, combined with current staffing configurations, meet the needs. As a departure from the ideal pattern, decisionmakers in a district may depend largely or entirely on previous staffing patterns and previous budget patterns during the demand-decision process to produce the effective demand.

The supply process, largely carried out within teacher preparatory institutions (TPI's), was not investigated in detail and therefore is discussed only tangentially.

The staffing process includes the obvious function of filling or attempting to fill the positions determined by the effective demand process. It also involves the following important elements: setting of hiring criteria; job-acceptance factors (the ability of the district and the candidate to match their interests and requirements); procedures for placing new staff members in particular jobs and schools; and methods for providing for staff development and evaluation so that qualified personnel will remain and changing needs will be met.

The aforementioned three processes (demand decisions, supply, and staffing) are interdependent, together forming what economists call a *production function.* Partial failure in any one area will limit the school district's success in all three. If a school has carefully defined its needs, while the teacher-preparation institution turns out products without regard to these defined needs, then the school district is likely to have only partial success in recruiting the kinds of people it must have.

The diversity among and within the 10 districts becomes very apparent in an analysis of the variety of unmet needs and their causes as cited by interview respondents. It should be stressed that this study simply reports those needs mentioned by those in the school districts themselves. Within the scope and constraints of the study, there was no exhaustive or independent effort to verify those needs. Unmet needs can be either "felt" or emperically substantiated, and they are recognized here as legitimate regardless of the variety of educational goals of those who indicated their presence.

This very broad definition of unmet needs is itself an indication of the state of the art of educational theory and its application in school districts. None of the school districts visited used any system which was based on both theory and data, which related needs to their solutions, which showed conclusively which needs (or their solutions) had priority in terms of their importance to the educational process, or which analytically chose the best solution to a need. This has created a situation in which a district may attempt to hire a certain type of teacher or fill a position that may not actually be required in terms of the actual, current educational needs of students. The process can figure statistically in a teacher-demand study but can also provide the false impression that each filled or unfilled position is related to a realistic student need.

Although no attempt was made to evaluate either the legitimacy or the priority of needs within a given district, some needs can be related to the National Education Association's (NEA) figures.[1] However, two cautionary notes must be sounded. First, great emphasis on the need for "remedial" and "specialist" teachers emerged at the elementary level, and other levels in the system. To what extent is this "need" for specialists and remedial teachers a result of the lack of quality of present classroom personnel? Elementary teachers are trained as generalists, yet they must cope with mathematics, science, reading, music, foreign language, et cetera. Probably, no one teacher is facile in all areas nor, apparently, are most prepared in all of them. To what extent does the expression of this need represent an implicit decision that the concept of self-contained classroom learning is outmoded and unresponsive to the wide variety of needs represented by students in each classroom? To what extent are "needs" for specialists and remedial teachers at the secondary level an implicit recognition that poor quality teachers "pass on" their failures to be coped with at the next level? To what extent are secondary classroom teachers, who are now trained on the assumption that their students know how to read, lacking in "quality" when they can neither teach their subject matter to nonreaders nor improve the reading ability of their students? In other words, some needs are primary needs, and others are secondary needs resulting from the primary needs. Without extended evaluation, the determination of which needs are which is impossible. Yet, in the long run, primary needs must be met at an early level to relieve other parts of the system of the inherited effects.

Second, school systems either were unable or unwilling to evaluate staff on the basis of the quality of the *content* of teaching (as opposed, for example to the *process* issues raised relating to children, etc.). Even their definitions of teacher quality varied greatly and were vague. Thus, there is no attempt here to pose specific quality criteria against which to measure staff and make assessments as to the scope of the problem. That is a whole study (or series of studies) in itself.

The list of unmet needs which follows (table 1) is certainly not comprehensive. It should rather be viewed as partially indicative of the types of educational needs which public school systems are not currently meeting, either in whole or in part. It is divided into two categories: unmet needs related to the demand-decision process, and unmet needs related to

Table 1—UNMET NEEDS

Primary process	Need description	Number of school districts mentioning	NEA commentary [1]	
			Supply	Extreme difficulty filling
Demand-Decision Process	Teacher aides [2]	9	—	—
	Special education [2]	9	Low	20 of 47 States
	Psychologists [2]	8	—	—
	Guidance counselors [2]	7	—	13 of 47 States
	Elementary physical education	7	Possible shortage	—
	Elementary art	7	Near balance	—
	Elementary music	7	Possible shortage	—
	Teaching consultants	5	—	—
	Librarians [3]	5	—	21 of 47 States
Supply Process	Industrial arts	10	Near balance	18 of 47 States
Staffing Process	Positive attitudes toward students	9	Near balance	—
	Reading specialists/ Diagnosticians [4]	8	—	16 of 47 States
	Responsive to individual student needs	8	—	—
	Flexible, innovative, open to change	8	—	—
	Sensitive to other cultures	7	—	—
	Elementary male [5]	7	—	—
	Blacks/Chicanos	6	—	—
	Vocational education	5	Shortage	9 of 47 States
	Science (elem.)[6]	5	Shortage	10 of 47 States
	Remedial math [6]	5	Shortage	16 of 47 States
	Bilingual teachers	4	—	—
	Young teachers	4	—	—

[1] *Teacher Supply and Demand in Public Schools, 1970*; Research Report—R14. Research Division, National Education Association.
[2] Supply and staffing were also problems in some districts.
[3] Staffing was also a problem in some districts.
[4] Demand was also a problem in some districts.
[5] According to NEA figures (*Teacher Supply and Demand in Public Schools, 1969*) only slightly over 10 percent of elementary school personnel are males; less than 10 percent of these are "regular instructors."
[6] Particularly the quality (professional development) of current staff.

the supply process or the staffing process. Note that some unmet needs are subject-related (i.e., industrial arts), while others are not (i.e., black teachers).

Each year the school districts visited decide how many and what kinds of educational personnel they will seek to employ during the forthcoming year. (This includes both new personnel to be recruited and present personnel to be retained.) The following explains how the demand-decision process typically worked in the districts we visited. Also mentioned will be some phases in the process that typically did *not* take place.

By far the most important determinant in the process was the district's estimate of its prospective available budget resources and their allocation, as determined by internal and external contraints. Even though most of the districts visited had per-pupil expenditures above the national average, all of them were experiencing serious financial crises in their efforts to sustain or expand their programs. Further, since much of the budget of some districts came from outside sources which often earmarked their contributions, districts were sometimes constrained in how they could use significant portions of their budget. All of these budgetary restraints affected the staffing configurations of the districts.

In arriving at their demand decision, districts forecast enrollment for each school and for the district. Typically, each school, under staffing guidelines set by the district, indi-

cated its estimate of its effective personnel demand to the central office. In many cases the qualitative and quantitative dimensions of the demand simply replicated or slightly modified the present staffing configurations.

The central district staff and the school board typically collated the demands of the separate schools, paring demand according to priority considerations until the total cost of personnel demand came within the expected budget. The first priority for most schools and districts was to satisfy their requirement for regular classroom teachers.

One basic assumption was that the district staffing configuration, like all other components of the district, should be responsive to educational needs. It was found that the 10 school districts visited felt they had achieved only partial success in meeting their students' educational needs through current staffing. Staffing, as defined by these districts, included not only the number and quality of staff, but the way in which staff was utilized.

Thus, *effective demand* for educational personnel in school districts (the positions they tried to fill) cannot be equated with the staffing (and its utilization) *that would help the district to meet its educational needs.* It is important to keep this fact in mind when examining conventional teacher supply and demand studies. The latter look at the match between the effective demand and the supply of teachers. They draw no conclusions about whether the supply of teachers matches the *need* for them. In this respect, the present study differs from conventional supply-demand studies.

Why did the effective demand differ from the staffing configuration appropriate to meeting educational needs? This occurred because most districts were *not* oriented toward setting up their curriculums, program policies, and staffing in order to satisfy the educational needs of their students. First, *little broad systematic assessment of needs* involving participation by students, parents, and the community, as well as educators, was carried out, either on a school or district basis. No attempt was made to ascertain the needs of teachers in paying individual attention to students. Furthermore, there was almost no attempt to anticipate needs likely to arise in the future.

There was little evaluation of present programs to discover whether or to what extent they currently meet the needs of students. Even when such evaluation occurred, there was little modification of present programs or design and implementation of new programs on the basis of the evaluation. All of these factors worked together so that, by default, the demand-decision process in most districts was heavily dependent upon the staffing patterns and budget of previous years, without explicit examination of whether those staffing patterns respond to current or future educational needs.

What were the underlying causes for these deficiencies and shortcomings? First, there were budgetary restrictions, made worse because of the impact of inflation. Second, the district decisionmakers were insulated from any expression of needs by students and parents. And, as a background cause, there was the fact that school districts were seldom held accountable to their constituents for the quality of education, despite broad statements to the contrary and unorganized grumbling from the constituents. Typically, districts were responsible for operating within a budget and, in some cases, for maintaining teacher-pupil ratios. But they were not held accountable for ensuring that staffing requirements and priorities contributed to meeting the educational needs of students. And this is not surprising, considering the present-day "state of the art" of relating staffing solutions to needs.

Finally, as an institutional exemplification of the problem—and in turn a contributor to it—few districts employed individuals or agencies to carry out the steps that would make staffing consonant with needs. No one was assigned responsibility for implementing broad systematic needs assessments or evaluations of present programs in terms of need solutions.

There was, however, experimentation in the demand-decision process and in staff utilization in some districts and schools. Where experimentation was found to exist, schools were moving toward student-oriented educational teams—integrating administrators, teachers, specialists, and aides. These configurations were set up in order to provide individualized instruction based on specific, identifiable student needs. Further, teams were set up to

make the best possible use of the skills and capabilities, as well as the motivations, of individual teachers. Even within their budgetary constraints, some schools and districts have achieved far greater flexibility in the discretionary use of funds (limited as they are) than their counterparts with similar budgetary constraints. In a few cases, budgetary cuts acted as the stimulus to seek out and implement imaginative ways to use teacher aides and unpaid volunteers with teachers who had larger classes under the more stringent budgetary situation.

The following sections describe how the demand-decision process worked in two of the districts examined.

School District A

School District A, an innovative district which it was felt was closest to the ideal in its demand-decision process, is a moderately wealthy suburban community with above-average yearly per-pupil expenditures (around $800). Although faced with a severe budgetary squeeze in 1971–72, its demand-decision process is not likely to change and bears examination.

However, before describing the ongoing yearly decision process of defining teacher and other professional needs, a word about the background of innovation in District A is necessary. About 10 years ago a fundamental review of the objective, goals, and educational needs of the district was initiated. This led to a needs assessment of personnel and to changes in philosophy, policy, and programs. The inquiry process used in the review involved the community (through meetings and a mail questionnaire) and the professional staff.

The needs assessment leading to change in the educational philosophy, policies, and operating practices was continued over a period of years by teachers and the community. Consideration and thought were given to the type of society children will live in, the need to know how to learn, the rate of technological change and its impacts, the findings of behavioral science, and the philosophy of individualized, continuous education. Because this needs assessment has been completed, yearly definition of new needs can be addressed and the process made workable. The basic patterns of process and analysis are well established. The framework for this process is the theory and research of differentiated staffing and individualized instruction done by a noted education consultant.

The decisions on teacher and other professional needs were widely shared in District A among teachers, the administration, and the school board. Some continuing involvement of community, parents, and students also occurs and is increasing.[2]

The four-level framework (master teachers, etc.), of teacher functioning has led to emphasis on the qualities of newly employed teachers and the way teaching is to relate to curriculum content and revitalization on the one hand, and child-centered attitudes on the other. In more specific terms, teacher needs are specified by the appropriate grade level personnel or departmental teacher group as openings occur. Criteria are broad and comprehensive rather than simply directed to subject content. Needs for other staff, such as vocational counselors, are defined from a number of sources and are widely discussed before implementation. This goes on during the entire budget-making process.

In the long-range planning for District A's shift to differentiated staffing, professional staff levels have been projected to 1973–74. The total number is currently the same as in 1969, before the shift was started, but the mix has been altered markedly (master teachers, senior teachers, and paraprofessionals have been added; "regular" teachers are fewer). However, in the current financial crisis it is doubtful that continuous progress can be made in 1971-72 toward the 1973-74 projection. Clearly the financial feasibility of the projection depends in part on a balanced teacher group with a spread of salaries.

The number of paraprofessional staff is determined following separate formulas for the three school levels. The original target for 1973-74 was set at three in each elementary school, eight in each intermediate school, and 12 in each high school. The number of aides actually hired for the schools depends on theoretical and practical grounds: the differentiated staff mix as set up by the education consultant

and applied by another consultant and the district professional staff, plus the availability of Federal funds to support the aides. Upon changeover to differentiated staffing, the expenditures of paraprofessionals, clerks, and other support personnel increased 20 percent. Now that 1971–72 financial constraints are a major concern, there is apparently a move to cut back on paraprofessional personnel rather than on the pupil/teacher ratio. The aides have an informal liaison with a member on the district salary committee and thus have a voice in the decisionmaking process. However, the small number of aides and the ambiguity of their status (while they are members of the classified employee organization, their salaries are in certificated personnel budget) lead them to feel that their influence is minimal in a year with imminent cutbacks.

Under the district's policy of shared decisionmaking, needs for additional teachers are determined at the individual schools, mainly on the basis of enrollment forecasts, the observations and findings of the school staff, and —inevitably—the known availability of funds. In general, most professionals appear to have a part in the decisionmaking process. Some interviewees expressed dissatisfaction with various aspects of this shared decisionmaking and differentiated staffing. They said, for example, that the decisionmaking process was excessively long, and that the workload of a staff teacher and an associate teacher may be so similar that salary differences become open to question.

The relationship of decisionmaking in the school to that in the district is illustrated in this paragraph from a district document:

> All policies at the school level are made by each school's academic senate, composed of the senior teachers and the principal. Principals have no veto power. All district policy is made by the district senate, which is made up of the six principals, a senior teacher from each school, and the superintendent. Again, no one has veto power, although at any point a minority opinion can be filed and proper appellate (to the next higher body) procedures followed. The Board of Education has final word on all policy adoption.

Despite the district's pupil/teacher ratio guidelines, interviews indicated that the actual ratios vary among the elementary schools of the district on the basis of needs defined by the staff. Thus, one school may have a smaller mathematics class if it sets out to teach that subject in a different way. Staffing needs are sometimes filled by intraschool transfers, which must be agreed on by both schools involved.

School District B

School District B, in contrast with School District A, is a small rural community with chronic unemployment and below-average yearly per-pupil expenditures (under $400), primarily supported by nonlocal sources (State and Federal funds).

In this district, staffing, like curriculum, reflects the current orientation of the district toward a minimum program offering basic skills, with few if any "frills" or options beyond these fundamentals. The district is barely able to meet the State commission of education's minimum staffing standards. It offers no curricular options other than a basic college preparatory program, even though only 30 percent of its high school graduates go on to college.

The staffing process is fairly simple in District B, since it is determined according to fixed procedures and minimum guidelines laid down by the State commissioner of education. These standards cover virtually all aspects of personnel operations, including salary levels, staff mix, and pupil/teacher ratios. The superintendent receives State-supplied salaries for a specific mix of faculty and staff personnel based on District B's average daily attendance. In view of the district's reliance on State funds, staffing is determined as much by the State department of education as by local administrators, who participate only in forecasting the all-important average daily attendance.

In order to hire personnel beyond those computed in the State aid formula, District B must rely on local or Federal funding. Although local monies are used only as marginal supplements to the State-supported salary scale, Federal funds have enabled the district to hire a small number of additional staff (including kinder-

garten, art, and remedial reading teachers, as well as librarians and aides). The allocation of such Federal funding is also coordinated through the State education department.

The process of setting staff requirements for the next school year is begun in late winter and completed in early spring, when the prospective budget is approved by the county court. If the State legislature takes subsequent action which affects that budget, the superintendent then files an amended budget for final court approval in July.

This district is unique among those visited in the lack of control and discretion exercised by the superintendent and other district officials in determining staffing requirements. Because local funds have been insufficient, the district must honor the staffing requirements mandated by its two major revenue sources, the State education department and special Federal programs.

UNMET NEEDS RELATED TO DEMAND

Quantitative shortages due to imperfections in the *demand-decision process* were evident in the 10 districts visited in the following areas:

Teacher aides
Special education teachers
Psychologists
Guidance counselors
Elementary physical education teachers
Elementary art teachers
Elementary music teachers
Teacher consultants
Librarians

The needs addressed by these categories of educational personnel are varied. One thing the categories have in common, however, is that they respond to more specialized and discrete needs rather than to the need for regular classroom teachers. In the demand-decision process, priority is given to obtaining the latter. Shortages in the aforementioned categories also stem from a tight budget situation. School district programs and policies were usually determined more by what was financially expedient or possible than what was educationally related to the needs of students. Regardless of their level of per-pupil expenditures and the scope of their current programs, all 10 districts visited felt that they did not have sufficient funds to provide programs that would adequately meet the educational needs of their students. In some of the districts, staffing cuts due to the financial crisis have led to cutbacks in existing programs or even to their termination. Because of the priority given to regular classroom teachers, these cuts tend to begin with the kinds of ancillary personnel listed above. Thus, the paramount considerations in the demand-decision process were the priorities of obtaining self-contained classroom teachers for the elementary level and subject matter specialists for the secondary level—both at specified teacher/pupil ratios.

A further reason for the shortage of the categories previously listed is that the demand-decision process included little consideration of possibilities for experimenting with combinations of self-contained classroom teachers with other educational personnel (e.g., specialists and paraprofessionals). This reflects the fact that broad and systematic needs assessment involving the participation of all interested parties simply do not exist in many districts. Very few districts either modify existing programs or design new ones on the basis of evaluation.

Each category of unmet needs is discussed in this chapter.

Teacher Aides

Teacher aides are needed for a variety of roles, from instructional reinforcement tutoring to low-skilled clerical work. Many respondents indicated that the need for aides of all types is most acute in the elementary schools, while the need in secondary schools was mainly for clerical help and for hall or lunchroom monitors.

Nine districts indicated that this ancillary staff category ordinarily does not receive sufficient budget funds to create the needed salaried positions. Most frequently this is due to the other demands (especially for professional classroom teachers) made on limited financial resources, leaving little, if any, funds for teacher aides. In a few of the districts, professional teacher associations have sharply

constrained the utilization of noncertificated ancillary personnel through informal pressure or explicit negotiated agreement (although one association had taken the opposite tack and used part of its lump-sum negotiated funds to support aides for the schools). Such groups usually defended such stances with statements that an increase in ancillary personnel positions could reduce the number of job openings available for their own certificated professionals.

Although several districts are encouraging those responsible for each school's personnel affairs to consider tradeoffs between paraprofessional aides and professional staff, particularly where budget constraints preclude hiring the extra personnel desired to meet needs, most schools are financially able to avail themselves of only a token number of paid paraprofessionals. The only schools that can ordinarily develop effective teacher-aide staffing programs are those with nonlocally funded projects; e.g., projects with State or Federal funds earmarked for such paraprofessional salaries.

In some schools and districts, the unmet need for aides is partially accounted for by the fact that the decision influencers—including principals, teachers, and central district administrators—often do not fully recognize the financial and the instructional benefits that could result from changing their traditional staffing mix by adding aides. Even some schools with teacher aides stated that few teachers or aides really understand how they can most effectively work together. For example, some faculty members considered teacher aides as intruders in their classroom affairs—hardly the type of attitude which encourages proper use of paraprofessional assistance. In one district, however, the services of aides were supported by Federal funds as a way of increasing the minority mix and bringing the community culture into the classroom.

Because of the shortage of salaried positions for teacher aides and also to alleviate other unmet need areas, almost all districts have initiated programs designed to foster volunteer paraprofessional help in the schools. These volunteer aides may be local parents, other community adults (e.g., senior citizens), older junior high school or high school students (sometimes helping in areas connected with their course work), or nearby college students. However, not all schools or districts have equal access to such voluntary help. For instance, in neighborhoods in which both parents work or in which mothers must care for smaller children in their homes, schools are not able to attract any volunteer help. There may not be programs whereby high school students can work in other district schools, nor colleges within easily accessible distance.

Special Education Teachers

Nine districts reported unmet needs in special education. (The remaining district does not assume responsibility for most special education programs since other nearby agencies provide such services.) Staff trained in working with emotionally disturbed students, pupils with speech problems, and the educable mentally retarded were mentioned as most frequently needed. In addition to these three areas, there were other students whose special educational needs were unmet: brain injured, trainable mentally retarded, slow learners, and the deaf.

The two major reasons for the unmet needs in special education are insufficient budgeted demand and inadequate supply of trained personnel. Most of the districts visited relied on State and/or Federal funds to support their special education programs. Usually these funds are inadequate to meet the full range of needs of the students. Since pupils with these special education requirements usually represent only a minority of the total enrollment, their needs are often given rather low priority when it comes to allocating district budget funds. One special education administrator stated a possible additional problem. "Very few parents of special education youngsters are willing to admit publicly the existence of their childrens' problems, a factor which effectively precludes the formation of a powerful local pressure group which could press for more funds, higher priority, etc."

The problem in the supply process seems to be one of quantity more than quality: there are simply not enough special education personnel to fill even the available jobs, which are themselves insufficient. Few respondents criticized the quality of the available manpower.

although there were differing opinions as to the best way to integrate the districts. As might be expected in view of the limited supply, certain less competitive districts also saw this area as a recruiting problem. For example, one large district did not offer any salary increment for training in certain special education fields, and had a difficult time attracting personnel since other nearby districts could afford such premiums.

Psychologists and Guidance Counselors

There are unmet needs for psychologists in eight of the districts and for guidance counselors in seven. Five districts specifically mentioned the need for elementary guidance counselors. There was general recognition among respondents in these systems that current school counseling programs are inadequate to truly satisfy student needs for vocational, academic, and personal counseling. A typical comment was that "counseling had become an activity deluged with administrative paperwork (such as recordkeeping and scheduling), and out of touch with student interests and possible vocational opportunities outside school; all too often it has been associated in students' minds with the punitive or disciplinary arm of school affairs."

The need mentioned by three districts for home-school coordinators to work with students' families and teachers in a coordinated effort to deal with their problems is related to the need expressed for psychologists and counselors. All three staff areas are very much in line with the expressed need for educational personnel responsive to the full needs of each individual student.

While the unmet needs for school psychologists and guidance counselors primarily constitute a demand-decision problem, all three processes contributed to them. The most important constraint was budgetary. While the needs were generally recognized by decision influencers, lack of funds usually resulted in high student-counselor ratios in secondary schools, no counseling in elementary schools, and little if any professional psychological help at either level. The inadequacy of present arrangements was vividly exemplified in two districts; in one the waiting period for psychological testing was as long as 2 to 3 years, and in another the high counselor caseloads prevented any effective continuous student access to such services.

There also appear to be quality and quantity shortcomings in the supply process for these two staff areas. School psychologists capable of working closely and effectively with teachers, students, and parents are in short supply, as are guidance counselors who can provide competent advice and help to match the individual problems, needs, and interests of students. Typical of some responses was the complaint that "certain guidance counselors too often give advice more responsive to their own preconceptions than to the needs of the individual student," an observation similar to that made about many teachers. Minority students accused counselors of acting out their prejudices by "counseling" them into low-level occupations or aspirations.

Finally, recruiting problems contribute to the unmet needs in these staff categories. One of the most important has to do with comparatively low salaries offered by some of the districts we visited. In one system, school psychologist positions were left vacant because no competent personnel could be found who would accept the district salary offer. In other districts, guidance counselors were hard to find because of the pecularities of State certification requirements. In one such case, a district was forced to transfer a regular classroom teacher into a counseling position under a temporary emergency certification status because none of the applicants met the normal State standards. Likewise, placement was a problem in one district, where the counseling position in one school became the "demotion" slot for an unacceptable principal (who was untrained for the position).

Elementary Physical Education, Music, and Art

Elementary physical education, music, and art are also unmet need areas in seven of the districts. Trained professionals in these subjects are employed either on a part-time itinerant basis or only in limited number of schools; otherwise, the services of untrained personnel are used. These three subjects are viewed by many interviewees as valuable ways

of developing broader interests and abilities of students. Unfortunately, in most of the districts visited, they were among the first to suffer cutbacks, or even to be eliminated in times of fiscal austerity. As one administrator responsible for his district's instructional program put it: "The taxpayers act often to support only those educational programs oriented to basic fundamental skills of the three R's; and unfortunately they consider music, art, physical education, and similar programs as frills or luxuries which are not worth extra taxes."

Teaching Consultants

Five districts indicated the need for experienced, successful teachers to leave their classrooms and serve as districtwide consultants working with individual teachers in assessing and improving classroom teaching performance. Such "floating" teachers could be especially competent in either general teaching methods and approaches or specific subject areas.[3] The primary cause for this unmet need has been the lack of available funds. A secondary consideration, however, is teacher association opposition to this modified "differentiated staffing."

Librarians

Qualified librarians were mentioned as unmet staff needs by five districts. The functions for which such personnel are needed vary, including full-time management of the school library, assistance to the reading program, operation of the multimedia learning materials resource center. This category suffers the same general fate as other ancillary professional staff areas, except that the problem is not caused by lack of supply. Because this category often has lower priority than regular classroom teaching positions, it is also more susceptible to budget cuts or total elimination. Two districts also indicated problems in recruiting enough certificated librarians to fill the budgeted vacancies. In one system, the difficulty was imposed by stringent State certification requirements, which forced many librarian applicants to take additional coursework after graduation without any salary increment to reward the extra effort.

Possible Solutions

Table 2 shows some possibilities for specific need-related solutions. These possibilities were derived partially from the successful solutions observed during the 10 case studies and partly from analyses.

Table 2—POSSIBLE NEEDS FOR DEMAND-RELATED UNMET NEEDS

Unmet need	Need—specific solutions
Teacher Aides Special Education	Volunteers Paraprofessionals
Psychologists) Guidance Counselors)	Better utilization of the services of professional staff by employing aides to perform clerical duties
Elementary Physical Education) Elementary Art) Elementary Music)	Team teaching
Teaching Consultants Librarians	Differentiated staffing Volunteers, paraprofessionals

Properly utilized volunteers and paraprofessionals can go a long way toward filling unmet needs—the former at no cost to the schools. For example the services of aides and volunteers may be used appropriately to relieve educational personnel of clerical duties (guidance counselors were particularly bogged down in "administrativia"), for tutorial assistance to slow learners or gifted children, and as classroom assistants (dividing the classroom in two segments, for example). All but one district used paraprofessionals or volunteer help. However, in several of the districts the means of utilizing these personnel were questionable.

Differentiated staffing (which includes aides and team teaching) would allow greater flexibility in the classroom and would allow elementary teachers with specific interests to pursue them to a greater extent. Only one district made extensive use of differentiated staffing; three others had pilot schools with some form of differentiated staffing; and one or two others had made some tentative steps in this direction.

Educational needs continually change. School districts do not meet a given need once and for all. In one district visited, previously hired teachers were teaching college preparatory courses in a school where the proportion of college-bound students had changed from 60 percent to less than 30 percent in recent years. These personnel may have satisfied the needs of those earlier student bodies, but they are not meeting the educational needs of their present students. Just as there are unmet needs which are the result of vacant staff positions, so too are there needs which are left unmet by the district's currently employed personnel.

Thus, in order to provide long-term solutions (i.e., adopt a generalized strategy of appropriate change), school districts need to carry out proper needs assessment, evaluation, and program planning. A district which intends to meet its educational needs must also open up participation in the process of making staff demand-decisions to parents, community groups, and even students. Only with the full participation of these groups will the needs of the parties-at-interest to children's education be heard and met. Only thus will the parties-at-interest discuss in the same frame of reference the needs and possible solutions to them. School districts which do not solicit the participation of all concerned during needs assessment, planning, and evaluation leave themselves open to *post hoc* attempts to influence policy (e.g., boycotts) by those left out of the process.

Certain aspects of the staffing process—recruitment, job assignment, inservice training, etc.—can also contribute to a school's abilities to meet presently unmet educational needs. In most cases significant increases in funding will be necessary before real solutions can be found.

Four of the districts visited have established continuing reviews of student needs and their implications for programs and staff. These evaluation efforts sometimes enable the districts to apply up-to-date knowledge in learning, behavioral, and teaching techniques in devising staffing patterns and curriculums to meet the newly identified needs.

Needs assessment can succeed only to the extent that those who are aware of the needs have a chance to report them. Several of the districts have attempted to increase their awareness of educational needs by expanding participation in the early stages of need recognition and setting priorities to include faculty members, parents, and even students. One of the systems has gone so far as to institutionalize such involvement by creating school administrative councils in which principals and teachers share responsibility for making all staffing requests and plans.

Several of the school districts visited have made various efforts to base their district staffing decisions more on educational considerations than on purely financial ones. Four districts, for example, have taken specific policy stands in favor of meeting specific educational goals and have attempted to structure their operating decisions and plans accordingly. These policy stands take a number of forms: establishment of specific class size targets designed to provide more staff on a per-pupil basis, creation of identifiable student learning goals for which the district assumes responsibility, or public commitments to broadscale staffing innovations designed to address various assessed or anticipated student needs.

Confronted with various legal and/or political constraints and pressures imposed by teacher groups or other parties, certain individual schools and districts demonstrated a unique willingness and ability to innovate within these limits, significantly altering the character or mix of their staffing demand and plans without violating the constraints. In several schools, teachers themselves had taken the lead in these efforts, often by agreeing to increase workloads or class sizes in order to experiment with increased utilization of paraprofessional assistance, team teaching, or other traditional approaches. In one of the districts, as we have noted, the teacher association even used its own negotiated compensation funds to pay for a certain level of paraprofessional help.

Growth in revenue in most districts has not kept pace with inflation and/or rising teacher compensation packages, and some districts have experienced recent voter rejection of increased funding proposals, guaranteeing an extended period of financial retrenchment. Several districts have not lain idle in the face of this discouraging financial prospect. For

example, one district with a low per-capita income (one of the lowest in its county)—and, therefore, having only an average per-pupil expenditure despite the highest tax rate in the county—has attempted to deal with its financial crisis by aggressively seeking out nondistrict resources, such as staff, financial, or materials assistance from local industry; special State and Federal program moneys; and charitable foundation grants. It has employed an administrative staff member whose sole job is to seek out such supplemental resources. However, such efforts do not obviate the critical need for additional support from the regular local, State, and Federal sources of education funds.

All of these approaches can help alleviate or eliminate unmet needs arising from problems in the demand-decision process, either by expanding the scope of budgeted demand or by improving the degree to which that demand represents a true understanding of the current and future needs of students and a firm commitment to their solution.

UNMET NEEDS RELATED TO SUPPLY AND STAFFING

Supply Process

The supply process, largely carried out within teacher preparatory institutions (TPI's), attracts, selects, and trains students for educational occupations. Because the scope of this study was confined to the school districts themselves only a limited number of interviews were conducted in TPI's. The following remarks on the supply process represent mainly the viewpoints of the districts and should be viewed in the light of this limitation.

Background data indicate that some quantitative *overall* teacher shortages have been temporarily alleviated by demographic trends. These trends include increasing numbers of people in the 20-25 age group (graduating teachers) and decreasing numbers in the 5-17 age group (students). This trend is expected to continue for some time. An even shorter term trend contributing to alleviating gross number shortages in certain fields is the economic slowdown which began in 1969. The slowdown has resulted in many scientifically trained people being unemployed; some of them are looking for teaching jobs. In addition, classroom teachers may be in quantitative (but not necessarily qualitative) oversupply, since the slowdown has curtailed the budgets and the effective demands in some districts.

Information on the supply process indicates that it includes little training for innovative approaches in education. TPI's tend to emphasize content rather than process. Few TPI's, according to the districts, are preparing students for team teaching and differentiated staffing; rather, training concentrates on one-teacher-to-a-classroom interaction. Student teaching too often occurred in white middle-class schools, preventing student teachers from gaining experience with children of minority groups or disadvantaged children. This lack of experience was detrimental on two counts. First, it prevented student teachers from testing their ability to teach these types of children comfortably, thereby depriving the student teachers of a means of making their own career decisions. Second, it failed to train them, before their first postgraduation assignment, to develop the sensitivities and techniques necessary to meet the needs of these kinds of students.

Although recent trends have alleviated gross teacher shortages, definite evidence was found of teacher shortages in certain ancillary specialty areas and in certain geographical areas. This will be discussed in more detail in the next section. As previously discussed, the alleviation of quantitative shortages should not be taken to indicate that qualitative shortages do not exist. They do.

In the TPI's, as described by the district staff and as revealed from interviews at TPI's, little seemed to be done to orient students toward the educational shortage areas. There appeared to be little communication between the districts and the TPI's regarding shortage areas and little use of national information that would identify these areas. Probably more important, it seems that the organizational dynamics of TPI's, like those of many colleges, encourage each department to expand to its maximum, regardless of whether or not its students can find jobs in their specialties. Finally, in many TPI's, students are assigned to or identified with education at a late

stage (junior or senior year) of their college career. This makes it difficult even to identify those students interested in education soon enough so that they can receive career counseling to encourage them, if they have appropriate interests and aptitudes, to go into shortage areas.

The Staffing Process

District success in filling budgeted vacancies with fully qualified personnel varied widely according to a district's location, accessibility to TPI's, district image, and recruiting practices themselves. District compensation policies also affected the competitive advantage of each district, the competitive advantage of education professions versus other professions, and success in recruiting and retaining educational personnel. Thus, even with a given nationwide situation of shortage or overage either in educational professions generally or within specific professional and paraprofessional areas, some districts have significant advantages in attracting educational personnel. A discussion of the staffing process and its effects in one district follows.

School District C, a moderate-sized wealthy district with per-pupil expenditures over twice the national average, was experiencing few area-related shortages in personnel, although it was unhappy with the quality and training of incoming staff and was unable to obtain black teachers of sufficient quality to meet its criteria.

Recruiting in this district, while active in the past, has been curtailed somewhat recently. Last year, 50 or 60 colleges (quite a few in the South) were visited by district recruiters and advertisements were placed in southern cities where the potential for a black audience is greater. Applications are screened by the personnel department. For those that reach the interviewing stage (which goes on continuously through the year), two principals (elementary level) or two building administrators (or one administrator and a department head) at the secondary level interview the applicant. Only upon a unanimous affirmative decision will the applicant reportedly be considered for an opening.

Some dissatisfaction was voiced with this method of selection. Since the schools are highly individualized (reflecting the philosophies of the principal), since newly hired teachers are not necessarily (indeed, not usually) placed in the school of the principal(s) who interviewed them, and since principals have little or no choice in job assignment, a teacher suiting one principal may be totally unsuited to the style and philosophy of the school into which he or she is placed.

Figures quoted as to the number of applications for the number of positions varied widely from 1,100 for 90 to 3,500 for 90. Factors considered in screening applicants are: knowledge of the subject area, interest in working in an integrated environment, creativity, willingness to experiment, and philosophy of teaching. Previous teaching experience is generally preferred.

Some figures will serve to illustrate the diversity of the teachers. No teacher is uncertified; teachers in the district have degrees from over 103 colleges or universities, but probably 70 percent of the teachers are from colleges or universities in the State; and two out of every three teachers hired have had previous teaching experience. In only one school (a pilot program) are teachers' services consistently utilized effectively in terms of flexibility in staffing. In others, however, some flexibility is shown in isolated instances. One principal, for example, assigns an art teacher to help in reading, since this teacher has proved to be excellent at reaching nonreaders through art, thereby getting them to read.

An extensive and dynamic program of inservice training has been taking place in the district, due to the recognition of a need both to orient new teachers and to keep teachers abreast of new ideas. A cooperative program involving five school districts in the county has performed several major functions: orientation of new teachers, inservice credit courses (which count toward salary increases), and helping teachers change their attitudes and culture norms so they may more effectively reach their students. Unfortunately, the funding for the program (title III, ESEA) would terminate in 1971.

All teachers from three elementary schools were involved in many of the pilot programs in those schools, from which have sprung creative approaches to teaching. (For example,

one school offers open, multilevel, ungraded, individualized instruction—all planned by the teachers—at no extra cost, and another opened up a storefront, free summer school in a black area of the community.) There is no complacency about inservice training. Incoming teachers are seen as needing more one-to-one supervision (like a "buddy" system); more emphasis still needs to be placed on innovation in teaching methods. The teacher association helps sponsor the inservice training program from its negotiated lump sum. This is unique among the districts visited.

As mentioned previously, taking courses for credit is part of the inservice program. In 1968 teachers were paid $140 to participate in self-development programs. In 1969 the amount was reduced to $100, and in 1970 no cash incentive was given, yet it is interesting to note that in 1970 there were more applicants than there were in 1969 when an incentive was provided.

District C recognizes the need for cross-district exchange as part of the continual process of professional development. It also appears unique among the districts visited in its cooperative courses, which allow interaction among teachers from five different districts. Some teachers also have traded classes with others outside the district.

Even with the evidence of dynamic involvement of teachers in high energy-demanding innovative activities, not all respondents painted rosy pictures of the teaching staff:

—"50 percent of the teachers exert no leadership."
—"Teachers use methods that are dull and boring."
—"Teachers are not doing their job; there should be mandatory reeducation for those that are not."
—"There may be an oversupply of teachers in quantity, but not in quality."
—"Good students don't go into teaching; teaching careers are recommended for the average student."

Qualitative Shortages

There were many teachers who showed qualitative deficiencies with respect to meeting the needs of students in the following areas:

—Positive attitudes toward students
—Orientation to individual student needs or interests rather than subject matter
—Flexibility in approach, willingness to experiment, openness to change
—Sensitivity to other cultures

Most of the unmet needs for teachers meeting these criteria arise from failures in the supply process. Particularly, it appears from the limited information gathered about TPI's that they do not sufficiently emphasize training in and sensitivity to interpersonal relations. As a further aspect of the supply process, many teachers came from a middle-class background, and this makes it difficult for them to become aware of and responsive to the needs of minority or disadvantaged students.

(1) *Positive Attitudes Toward Students.* The paramount need (mentioned in nine of the 10 districts visited) was for educational personnel with positive attitudes toward students. This need was identified and expressly articulated across the board—from the central office on down. As one group of students put it, "Teachers are human beings until they step into the classroom." Respondents expressed the need for teachers who could treat students as individual human beings, who could be friendly with their students, who recognized the rights of their pupils, and who treated them with respect. Typical of several respondents was the following: "You can take a person who likes and gets along well with children, give him professional training in an educational area, and end up with a great teacher; but it's very difficult to take someone, even though well trained professionally, who does not relate well with children, and make a decent teacher of him."

The important relationship between teacher expectations of student capability and actual student performance was cited as a reason for needing personnel whose views of their students' potential encourages greater achievement in the classroom. A self-fulfilling low expectation of students is a relatively common problem, especially in inner city schools in which teachers have become accustomed to unresponsive students, high dropout rates, and the like, and place most of the blame on the students, rather than modifying their own behavior and approach in an effort to provide greater challenge to their pupils.

(2) *Orientation to Individual Student Needs.* An important related need is for educational professionals who are oriented more toward meeting the individual needs and interests of students than simply toward presenting their subject. Many respondents argued that too much attention is devoted to *teaching* without an adequate understanding of *learning.* Teaching techniques and skills should be developed to respond to the learning abilities and problems of students, not vice versa.

In one or two districts there was particular concern over the teaching staff's inability to cope with different learning curves: the exceptional student, the slow learner, the hyperactive student, for example. Teachers and ancillary staff should be capable not only of detecting and diagnosing student problems but also helping to solve them. For example, the knowledge that a student has a reading problem is of little value unless the requirements in the way of staff, curriculum, or materials for its solution are understood and available. Apparently, the selection and training stages of the supply process are at fault here; i.e., personnel are not initially well-motivated toward the individualization of instruction and are not being well trained in it.

Some of the schools in the sample have achieved unprecedented successes by developing a core faculty group who believe in the capabilities of their students and who are enthusiastic about the instructional program of the school (which is in these instances usually based on a realistic appraisal of their students' particular needs). The positive attitudes and expectations of the faculty have encouraged students to develop more positive feelings about themselves, which have sometimes been reflected in terms of improved academic performance.

The lack of positive attitudes toward students is due primarily to shortcomings in the supply process. First of all, the decision to enter a career in public education may be motivated by factors other than one's personal feelings about children; e.g., the prospect for long-term job security, or (particularly in the case of women) seemingly better opportunity for gainful employment upon graduation than in other professions. Second, people who enter professional training programs may not have a chance to determine the true extent of their interest in education in time to choose other, more personally satisfying, professions. University instruction and practice teaching norms must also be faulted for too often failing to provide the types of experience needed to build skills in interpersonal relations.

Unfortunately, attitudinal qualifications are usually difficult to discern until after the person has been hired, and even then shortcomings may go unnoticed unless there is effective supervision and evaluation of staff members. Thus, the staffing and demand-decision processes also contribute to these staff shortcomings, by applying lax personnel screening procedures and by failing to assess adequately the degree to which previously hired staff are meeting the needs of their students.

(3) *Flexibility/Experimentation/Openness to Change.* Eight districts stressed the need for personnel who were flexible in their approach to meeting educational needs, willing to experiment with alternative or innovative techniques, and open to change. These districts satisfy all the needs of their students. Since educational needs are both personal and changing, their solution calls for approaches which can be individualized and modified as needed. Many respondents felt that very few teachers were competent in this area. One school district administrator estimated that only 25 percent of his staff could be considered creative, although 75 percent were receptive to changes suggested by others.

Again, the responsibility for this unmet need rests primarily with the supply process (specifically, the selection and training of potential teachers), though the other two processes share a portion of the blame (school districts without a reputation for innovation are not likely to attract innovative teachers, for example).

(4) *Sensitivity to Other Cultures.* There is a pressing need for educational staff capable of dealing positively with students whose cultural, economic, or racial backgrounds differ from their own. Such capability also involves an understanding of the effects such backgrounds can have on the learning or behavioral patterns of students. Respondents often stated that many teachers attempt to enforce their own values and cultural norms in their dealings with students from quite different back-

grounds, rather than accept the positive aspects of such cultural pluralism. Such insensitivity to the environment in which these students live was cited by several respondents as the reason why public school education has come to be perceived by many pupils as an irrelevant nuisance. Practice teaching in white middle-class schools and inflexible university courses were often cited as contributing to this failure.

In some schools visited in this study, teachers are working with curriculums developed years earlier for their then-predominantly white middle-class students. Now, however, nonwhite students and/or students from poor economic backgrounds are in the majority; yet the programs, curriculums, and materials in many of these schools continue largely unchanged. This retention of outmoded approaches and practices also happens at the individual classroom level when teachers are transferred into alien working environments. In several of the districts visited, numerous teachers had been transferred from schools in affluent, education-oriented neighborhoods to assignments in multiethnic poor areas, or vice versa. Often these teachers failed to modify their approaches or attitudes to respond to their new environments and, as a result, lost contact with their new students.

In the case of the Mexican-American students in four of the districts, this problem has two components: many of their teachers lack understanding of their students' cultural heritage and educational needs, and few can speak Spanish well enough to reach those students not fluent in English. These two factors were pointed to by several respondents as prime contributors to the depressingly high dropout rates among such students (as high as 90 percent). Indeed, very few interviewees felt that there were enough educational personnel who could effectively work with potential or actual dropouts from any type of background.

This teacher insensitivity also was mentioned in dealings with students with behavioral or emotional problems. It was felt, for example, that too few teachers could deal effectively with disruptive pupils or those unable to adapt to regular school life. This feeling is manifest in the expressed need for additional psychologists and special education staff.

Demographic Shortages

Shortages primarily due to the supply process were reported, involving the following kinds of teachers:

—Male teachers in the elementary schools
—Black and Chicano teachers
—Bilingual teachers (especially Spanish speaking)
—Young teachers.

Seven districts indicated the chronic need for additional qualified male teachers to teach in elementary schools. Respondents of both sexes felt that students, especially those from households in which there is no steady adult male presence, needed some type of masculine influence to offset the overwhelming predominance of females at the elementary level.

The major reasons behind the unmet needs for male elementary teachers, as well as for blacks and Mexican-American staff, are deficiencies in the early stages of the supply process. Most male educational personnel are trained for nonelementary areas, and most blacks and Mexican-Americans do not receive any professional training in the first place. The recruiting part of the staffing process also plays a role, particularly with blacks and in relation to the character of the district. One school district, which made energetic attempts (advertising and recruitment trips to the South) to secure black teachers had difficulty because its community does not welcome black residents, and it has a shortage of moderately priced housing.

Subject-Related Shortages

Districts visited had subject-related shortages due to the supply and staffing processes in the following areas:

- Industrial arts/vocational education teachers
- Reading specialists and diagnosticians
- Science teachers
- Elementary and remedial mathematics teachers.

(1) *Industrial Arts/Vocational Education.* Industrial arts was the one unmet staff need category mentioned in all 10 districts. Other examples of unmet needs relative to vocational

education include teachers for courses in machine shop, automobile mechanics, cosmetology, home economics, distributive (business) education, and data processing. The fundamental cause for the unmet staff needs in this important area is the fact that school districts cannot ordinarily offer compensation packages which compete with employers in private industry. In a few of the districts visited, some industrial arts and some vocational education programs have been forced to close for lack of staff.

Although a major problem is often one of recruiting capability, there are also deficiencies in the demand-decision and supply processes which contribute to this shortage area. Vocational education programs generally are not given high priority; when budget funds are restricted, these programs may be among the first to suffer. In one district, a new multimillion-dollar technical trade center may not even be opened because of budget cuts. No doubt partially because of uncompetitiveness of public school vocational education positions compared with jobs in industry, teacher preparatory institutions have also not been producing enough trained people in vocational education.

The problem of industrial arts is exemplified by District D, a small, geographically isolated area that at the time of our visit was just beginning to improve its image and appeal to teachers under a new, dynamic superintendent. Industrial arts in District D is seen as by far the most critical shortage area. To begin with, there are few institutions—six—in its State or in nearby States qualified to turn out industrial arts teachers. Apparently, the one in the district's own State has traditionally been the focus of recruiting for the district but turns out only 100 graduates a year. Not only does industry compete for this small number of graduates, but so also do other school districts. District D, being small, cannot offer the facilities and equipment, the opportunity for secondary employment, the diversity of programs, or the industry backing for programs that some of the other districts can. Thus, it loses out, in the opinion of the respondents. According to one respondent, recruiting has not been active enough. In a nearby State, for example, active recruiting, in 2 years, turned 37 unfilled industrial arts positions to an overflow situation. Other respondents feel that more attention needs to be focused on improving the image of industrial arts to entice more students into teaching this subject.

Many approaches have been taken to remedy the problem. For several years shops were closed for lack of qualified teachers. Local craftsmen were hired who were excellent at their trade but uncertified (without even a degree). Teachers were "retreaded" (teachers with some background in industrial arts but with certificates in a surplus area); certified but inexperienced teachers were hired; teachers who were both experienced and certified but whose records were questionable were hired. These approaches were disastrous. Except for one or two local craftsmen, the artisans generally could not relate to the students nor could the inexperienced teachers. "Retreaded" teachers applied for openings in their preferred fields as soon as positions became available, and the certified and experienced teachers turned out to be unstable. The image of the industrial arts program has suffered greatly as a result, and the decision has been made to restrict the availability of the program rather than compromise on quality. In 1971 the superintendent of schools and the present industrial arts teacher at the high school recruited extensively in nearby universities. The industrial arts teacher used his previous contacts in these schools to try to influence other industrial arts teachers to join the staff. Results were still uncertain at the time the district was visited.

(2) *Reading Specialists and Diagnosticians/ Elementary and Remedial Mathematics.* In view of the importance placed on reading skills, it was not surprising to note that eight districts expressed needs for more staff specially trained in reading. Such specialists would include not only diagnosticians and testers, but also classroom teachers specifically competent in actually teaching students at various skill levels to read.

Needs for remedial mathematics teachers were also mentioned in five of the 10 districts. The needs expressed in this area were mostly related to the feeling that current staff were using outdated techniques emphasizing the mechanics of mathematics rather than exploring relevant new methods for teaching the

analytical, logical, and conceptual aspects of the subject. As in the case of remedial reading teachers, this need also arises to some extent out of the inadequacy of the concept of the self-contained classroom, which requires teachers to be facile in teaching many areas.

One important reason for the existence of shortages in reading and mathematics is the increased visibility of the need. Disadvantaged students need special services in reading and mathematics in order to compensate for their initial handicaps. If the needs are not met at the elementary level, they lead to remediation needs at the secondary level. The TPI's are producing insufficient numbers of people trained as reading or mathematics specialists. In addition, the self-contained classroom teachers produced by the TPI's are not sufficiently trained to overcome or compensate for the limitations in home preparation and readiness for reading and mathematics. Further, few schools visited use team teaching or differentiated staffing approaches to maximize the contribution of classroom teachers having particular strengths in those areas.

(3) *Science.* Certification requirements caused difficulties in recruiting people otherwise qualified to teach secondary physics and chemistry. In addition, inadequacies in the supply process caused inadequate training of elementary teachers in science, as reported by some districts.

Table 3—POSSIBLE SOLUTIONS FOR STAFFING/ SUPPLY-RELATED UNMET NEEDS

Unmet need	Need-specific solutions
Quality of Staff	
Positive Attitudes	Inservice training
Responsiveness to Individuals	
Flexibility and Innovativeness	Young teachers
Culture Sensitivity	Minority, bilingual, and young teachers; inservice training
Demography	
Elementary Male	
Blacks, Chicanos	Paraprofessionals
Bilingual	Volunteers from the community
Young Teachers	
Subject-Related	
Industrial Arts	Recruitment further afield
Vocational Education	Hiring of less qualified teachers
Science	
Remedial Reading/ Diagnosticians	Recruitment further afield from oversupply areas
Elementary and Remedial Mathematics	Use of paraprofessionals and volunteers to bolster present staff

Possible Solutions

Table 3 gives a synopsis of possible general solutions to presently felt unmet needs. These represent both judgments of what *might* be done and a collation from the districts' experience.

The importance of a good inservice training program cannot be overemphasized. Both incoming teachers and current staff can benefit from human relations courses and a forum for discussing new theories and methodologies in teaching. Although most districts visited had an inservice training program, at least two-thirds of them were considered marginal by the majority of personnel interviewed.

In the face of the quality lack in the area of human relations, many schools are pressing for minority, bilingual, and young teachers. However, these in turn are in short supply. Paraprofessionals and community volunteers, although often difficult to obtain in the center city, have effectively served to bring the neighborhood into the school system. For Chicanos the paraprofessionals and volunteers are often the only adults in the classroom who can speak their language.

For subject-related shortages and staffing problems, broadening the recruiting effort has often proved effective in filling positions, although not necessarily in meeting needs. Some districts chose to close down a class rather than lower standards, but most districts either hired uncertified professionals or local artisans (for vocational education or industrial arts) or retained teachers from oversupply areas to fill their positions. Most respondents agreed that at best these measures were only partial (often temporary) solutions. Paraprofessionals to help alleviate the load of current staff in shortage areas were not used in any district, but certainly could be. Volunteers could likewise be used.

Long-Term Solutions. Communication between the school districts and the TPI's must be improved if the latter are to be responsive

to district needs. Where this communication has existed, the results have been impressive. Interaction cannot stop there, however. Interaction among school district teachers, professors, college students planning to enter teaching, and district students must be frequent. Cooperative planning of preservice training is also needed.

Many needs can be met if TPI's revise their curriculum as to content, process, and methods teaching; provide, as a matter of priority, course offerings in areas where teachers are in demand; and counsel students into these areas. To alleviate needs, the school districts could pay differentiated salaries in order to compete with industry in shortage areas. They could also encourage (through programs of subsidy) the entry of minorities into programs enabling them to prepare for teaching careers.

Some Solutions Observed in the 10 Districts. Some unmet needs are the result of failures to attract certain types of people into teaching careers, and many respondents stressed the need for programs which facilitate entry into teaching by interested people who are potentially effective educational professionals. In one district, several respondents pointed to efforts made to entice black high school graduates to enter teacher training programs in return for financial assistance during training and job placement upon graduation. Some criticized this approach, however, since "its *quid pro quo* arrangement may interest those primarily wanting a college degree *per se*, many of whom may have little or no actual desire or interest in becoming a teacher." Respondents in another district mentioned the possibility of providing high school students with exposure to the teaching profession through participation in tutoring programs. Such contact with the teaching career might help stimulate an interest in more students to enter public education professions.

Many of the unmet needs indicated by respondents in the districts visited were the result of perceived inadequacies in preservice training programs. Respondents strongly favored training programs which combined formal course work with substantial student teaching experiences throughout the duration of the training process. Such programs emphasize job training in which trainees serve as teaching interns in the school districts. Often the courses taught in conjunction with this student teaching experience are taught by experienced school district teachers or by professors with recent working experience in public schools. Such clinical training requires a great deal of collaboration between TPI's and school districts. Two of the school districts visited in this study had developed their own models for such collaborative preservice training programs with selected educational training or research institutions. In addition, several of the urban districts are participating to varying extents in nearby federally funded Teacher Corps programs.

Such preservice training programs can also potentially facilitate district recruiting efforts. Most of the districts participating in such programs attempt to recruit and hire trainees whose successful student teaching experience has been actively observed by those in the district itself. According to some respondents, the expanded opportunity for working in real-life teaching environments enabled trainees themselves to clarify their interest in a teaching career and to develop their abilities on the basis of a realistic understanding of the demands and problems faced by full-time public school teachers. The need for shared administrative and financial responsibility and rewards was stressed by some of those actually involved in these collaborative preservice training programs. Too often, it was felt, districts were forced to "donate" their time and resources to college-administered programs without receiving benefits commensurate with that participation.

Some school districts take an active part in communicating their unmet teacher needs to local TPI's and encouraging the TPI's to meet the needs. For example, one district visited, which until recently did not have enough girls' physical education teachers, solved the problem by approaching a TPI which instituted an entirely new program to prepare these teachers. Many, if not most, of the teachers graduating found employment with the district.

Some of the districts visited have been able to compensate for inadequacies in the locally available supply of education personnel by adopting more aggressive recruiting activities which serve to expand the portion of the total

potential supply which the district can tap for staffing purposes. For example, several systems conducted personal campus interviews at a wide variety of nearby and distant teacher colleges. Some augmented these visits with newspaper advertisements or recruiting letters in selected job markets.

If expanded recruitment efforts prove too costly or unfeasible, the district may reclassify the staff position and attempt to use alternative types of manpower. For example, several districts were forced to hire library clerks (at lower salaries and with less skills) because of problems in filling staff positions for certified librarians. In addition, some districts have used unpaid volunteers to provide needed staff assistance that is unavailable in any other way. A few of the districts visited have attempted to overcome recruiting problems by improving or restructuring their salary scales or fringe benefit packages. In their effort to recruit career teachers (those employees who will stay with the district for some time), some districts have increased either the salary increment or the maximum salary to encourage newly hired staff to remain with the district. Although most districts recognized the need to increase their starting salaries also, such increases were ordinarily constrained by financial resources.

The importance of screening, hiring, and assigning the most qualified applicants possible has been discussed earlier. One way in which districts can alleviate needs arising from problems in the first and third areas is to give those closest to the actual job themselves a forceful role in the process. For example, several districts have begun actively to transfer responsibility for interviewing, screening, and assigning to the principals of the schools having vacancies. Some have even involved other teachers, students, or parents in this critical process. In this manner, districts are able to avoid the problems which sometimes arise when central office personnel officials, who are somewhat removed from the positions (especially in large districts), have a monopoly on the selection and job assignment authority. Another way in which districts can alleviate staff inadequacies is by reallocating present staff into areas in which needs exist. Some districts have initiated their own "retreading" courses for such transferrals of staff; others have subsidized outside training for the personnel involved.

In addition to restructuring their salary scales, some districts have made additional efforts to improve their retention of previously hired staff members, especially those with innovative ideas. Due to seniority rights guaranteed by contract or tradition, those with the longest service in the district are often kept regardless of their current competence in meeting the contemporary needs of their students. Unfortunately, this means that newer employees, many of whom represent fresh contributions to the system's educational programs, are usually the first group to be let go in periods of budgetary retrenchment and staff cuts. In some districts, liberal transfer policies have enabled such personnel to seek work in schools that utilized their experimental interests and, thereby, helped to alleviate some of the frustration which might have contributed to early resignations.

Inservice training provides yet another opportunity to address unmet needs resulting from staffing inadequacies. When one considers the fact that teaching staffs undergo complete turnovers relatively rarely (despite fluctuations in attrition rates among certain groups of staff) and that many districts operate with strict tenure protection for senior staffers, the importance of inservice training becomes clear. Two districts in the sample have established relatively extensive inservice training programs—sometimes on a regional basis in cooperation with other nearby school systems—which include attention to educational innovation and human relations issues.

FOOTNOTES

1. The National Education Association publishes yearly figures concerning "Teacher Supply and Demand in Public Schools." These figures deal primarily in gross numbers (national, State, or "large school districts"), and with quality only from the standpoint of minimum qualification. They do not deal with utilization in any real way.
2. Counselors are one group that apparently is not part of the decision process on professional needs.
3. As mentioned previously, it is difficult to determine whether certain unmet needs are secondary (resulting from other unmet needs) or primary.

CHAPTER 3

The Teacher "Surplus"

A surplus of teachers is certainly with us. Although different projections of supply and demand come up with different estimates of the dimension of this surplus, there is very little doubt that more persons are seeking teaching jobs than there are openings and that the excess of applicants over vacancies will increase in the course of this decade.

This chapter attempts to look at factors affecting both the supply of and demand for public school teachers in the early 1970's. It focuses on these key findings:

FUTURE DEMAND

In the next 5 years, according to National Center for Educational Statistics (NCES) figures, the total of public school teachers is not likely to increase by more than 40,000.[1] And this growth will take place only if (1) pupil-teacher ratios continue declining, (2) preschool enrollment rates rise by 25 percent over the 1970 experience, and (3) the dropout rate in high school is further reduced. By contrast, the growth in the 5 years between 1960 and 1965 was 300,000 and was 272,000 in the 4 years from 1966 to 1970.

A more optimistic estimate[2] indicates that vacancies in the next 5 years could total 100,000 to meet increases in enrollment and 140,000 to meet a decline in pupil-teacher ratios. In addition, there will be 998,000 vacancies caused by teachers leaving education.

FUTURE SUPPLY

To fill these positions, there will be an estimated 2,053,000 new graduates likely to seek teaching positions, plus 300,000 older men and women returning to the teaching field. These estimates mean that there could be a surplus of more than a million potential teachers within 4 to 5 years.

RECENT EXPERIENCE

In 1969, about 282,000 students were graduated with teaching credentials. Of these, some 196,000 were expected to seek teaching jobs. Another 46,000-50,000 persons, who received training earlier, were expected to reenter the teaching profession, bringing the total to 242,000-246,000 applicants. However, there were only 184,000 openings, thus producing a surplus of between 58,000 and 62,000 applicants.

Of the 184,000 openings in 1969, 41,000 were new jobs due to increases in enrollments or declines in pupil-teacher ratios; 23,000 of these jobs were in the suburbs.

One teacher in 10 in 1969-70 was new, and another one in 10 began the year in a new school.

Contrary to popular impression, a larger proportion of experienced teachers can be found in central cities than in suburban or nonmetropolitan areas.

The yearly average turnover in a school district is 15.2 percent. Roughly 9 percent of all teachers leave the profession every year, and 6 percent move to different teaching jobs.

The decade of the 1970's will witness the accentuation of the trends of the late 1960's, a period when for the first time in 30 or 40 years, the number of qualified applicants for teaching jobs exceeded available positions. The

obvious conditions creating change in the labor market for teachers are due to (1) a declining rate of growth of enrollments in public schools, and (2) an increasing number of recent college graduates qualified to teach.

The number of public school teachers increased by some 300,000 in the 5 years between 1960-65, and by 272,000 during the 1965-70 period. Even according to the more "optimistic" estimate, the number is not likely to increase by more than 240,000 in the 5 years between 1970 and 1975. By contrast, the number of college graduates grew from 2.3 million in the period 1961-65 to 3.4 million in 1966-70. It is expected to increase further to 4.8 million in the 5 years between 1971-75. While enrollments in elementary schools are declining and enrollments in secondary schools are leveling off as well, a continually increasing proportion of the products of the baby boom are graduating from college.

A summary of developments from 1961 to 1970 and projections to 1975 appear in table 4. The range in projections is due to the uncertainty about future pupil-teacher ratios, the trend in preschool enrollments, the dropout rate, as well as the role of private schools in the near future.

Table 4—INCREASE IN PUBLIC SCHOOL ENROLLMENTS, CLASSROOM TEACHERS, AND TOTAL BACHELOR- AND FIRST-PROFESSIONAL-DEGREE RECIPIENTS, 1960 to 1975
(In thousands)

	Enrollments nursery—12	Teachers	B.A. and first professional degree
1961–65	6,197	302	2,277
1966–70	3,849	351	3,400
1971–75	–958 to +1,700	20–240	4,761

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Projections of Educational Statistics to 1980-81 (1971 Edition)*, U.S. Government Printing Office, Washington, D.C., tables 2, 21, and 26. High estimates for 1971 to 1975 enrollment and teachers are by Joseph Froomkin, prepared for the President's Commission on School Finance.

Estimates of Teacher Turnover

The low number of additional classroom teachers as estimated in table 4 indicates a bleaker job market than is actually the case. In fact, new teachers will be needed to meet attrition as well as new openings resulting from lower student-teacher ratios, increases in preschool enrollment, and declines in the dropout rates. Additional vacancies will occur as currently employed teachers die, leave teaching for other jobs either in or out of education, or withdraw either to raise a family or retire.

Two surveys of the ebb and flow of instructional personnel, one conducted in 1959 and the other in 1969, can be used to provide estimates of the likely withdrawals of the present classroom staff which will increase the number of openings over and above the net additions expected to occur in the course of the next 5 years. While the two surveys are not precisely comparable (see table 5), they do support the inference that between 1959 and 1969 there was a fair amount of stability in the rate of attrition and teacher mobility.

Table 5—REASONS FOR SEPARATIONS OF PUBLIC SCHOOL TEACHERS—1959, 1969
(percent)

	1959	1969
Leave of absence	1.2	1.2
Nonteaching job in education	0.4	0.7
Nonteaching job outside education	n.a.	1.3
Retirements and deaths	1.3	1.9
Job in another school district	10.5	5.9
Other reasons		4.2
Total	13.4	15.2

Source: 1959. U.S. Department of Health, Education, and Welfare, Office of Education, *Teacher Turnover in Public Elementary and Secondary Schools, 1959-60.*
1969: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *The 1969 School Staffing Survey of Additions and Separations of Public School Teachers for 50 States and the District of Columbia* (unpublished).

Jobseekers and Openings in 1969-70

The 1969 survey [1] of additions and separations of teachers in public elementary and secondary schools during 1969-70 not only describes how teachers move from job to job, or in and out of the labor force, but also shows the number of new vacancies filled. The survey's estimates, based upon a sample of 800 schools, placed the total number of new positions in the Nation's public schools at 41,000 in the academic year 1969-70. The number of new teachers was much higher than that. Because of attrition due to death, retirement, promotions to nonteaching jobs, or due to teachers leaving the profession, 184,000 new teachers were hired that fall. Thus, in 1970,

roughly 3½ times as many openings for new teachers occurred as a result of attrition than as a consequence of additions to the staff. Another 183,000 teachers started the year in different schools, either in the same or in different school districts. When school opened in 1970, roughly one teacher in five in each school was new to the school.

This information on the ebb and flow of instructional personnel can be used to draw conclusions about job opportunities in elementary and secondary education by comparing new openings to the number of potential teachers. During the academic year 1969-70, 282,000 persons graduated from college with teaching credentials. If past trends were followed, 196,000 would have sought and found positions in the classroom.[3] Also in line with past trends, an additional 46,000-50,000 persons, other than recent graduates, would have looked for and been placed in jobs in public elementary and secondary schools.[4] However, there were only 184,000 new teaching openings available. Therefore, as many as one out of five jobseekers were disappointed. (See table 6.) The results of the 1969-70 staffing survey can be used to imply a surplus of 58,000 to 62,000 applicants for that year.

The survey on which this estimate is based does not give any information on how well recent graduates did in the job market by comparison to older people, usually women, who returned to teaching. Anecdotal information from a number of school districts indicates that the brunt of the surplus was borne by older people who wished to find teaching positions.

Regional Patterns of Job Opportunities for Recent Graduates

The 1969 School Staffing Survey was based on a sample large enough to make it possible to estimate the number of job openings filled by new teachers by region for the total U.S.[5] The number of new vacancies resulting from staff increases was highest in the Northeast region, about equal in the North Central and South, and lowest in the West. It is significant that the number of college graduates likely to choose careers in the schools and the number of openings filled by new teachers varied considerably from region to region. Some regions came close to achieving a balance between recent graduates and jobs, while others experienced a surplus of applicants:

—The Northeast region had a surplus of approximately 4,000 applicants, even though it had the largest number of openings. With 64,000 persons receiving degrees and preparation to teach in elementary and secondary schools, 45,000 could have been expected to start on a career in this field. Actually, 41,000 openings were filled with new teachers.

—In the North Central region, with 93,000 graduates qualified to teach and 67,000 who were likely to seek teaching jobs, all new openings could have been filled by recent graduates, with 9,000 new teachers left over. This was the region with the largest surplus.

—In the South, there was a balance between recent graduates and openings for new teachers. With 85,000 graduates, 58,000

Table 6—JOBSEEKERS AND NEW TEACHERS HIRED IN PUBLIC SCHOOLS, 1969-70
(Figures in thousands)

	Total graduated qualified to teach	Likely to seek teaching jobs		New teachers hired
		New graduates	Others	
U.S.	282	196	46–50	183.7
Northeast Region	64	45	n.a.	41.1
North Central Region	93	67	n.a.	58.3
South Region	85	57	n.a.	58.0
West Region	40	27	n.a.	26.3

Source: Adapted from U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *The 1969 Staffing Survey*. (Totals may not match because of rounding.)

of whom would have been placed in the classroom according to past trends, the number of new teachers hired was 1,000 more than the number of graduates likely to seek jobs.

—In the West with over 40,000 recent graduates, and 27,000 likely to seek jobs in the classroom, 1,000 too many jobseekers were estimated.

These estimates of supply for new teaching jobs are based on past trends in the proportion of recent graduates with teaching credentials likely to seek careers in teaching. With a worsening of economic opportunities for college graduates, it is conceivable that more young potential teachers were disappointed. Also, the estimates do not take into account jobs filled by older people coming back into the labor force. Where layoffs among professionals in aerospace have swelled unemployment ranks, especially in the Far West, the number of disappointed jobseekers would be more than an estimate based on the national average.

HOW TEACHERS MOVE FROM JOB TO JOB

An understanding of the movement of teachers from one job to the next, and an analysis of how these patterns vary from region to region, in central cities, suburbs, and nonmetropolitan settings, as well as in schools serving poor children, can provide some insights into where jobs for recent graduates are most likely to materialize.

Regional and District Variations

The proportion of new openings (for new teachers and for those who moved to different schools or school districts) varied from region to region, from a high of 14.3 percent of teachers in the North Central region to a low of 9.4 percent in the West. New vacancies for teachers were 11.2 and 11.7 percent in the Northeast and North Central regions, respectively.

Vacancies due to increases in staff ranged from a high of 3.6 percent in the Northeast, to 3.3 percent in the North Central region, to 2.2 percent in the South, and a low of 1.0 percent in the West.

The proportion of new teachers hired to fill these jobs varied somewhat from region to region:

—In the Northeast, 87 percent of the vacancies were filled by new teachers;

—In the North Central region, 76 percent;

—In the South and West, 81 and 91 percent, respectively.

The proportion of total number of teachers hired to total number of teachers on duty during the preceding year varied by region as much as did new openings: It was 9.6 percent in the Northeast; 10.8 percent in the North Central region; 9.5 percent in the South, and 7.7 percent in the West. The Western region hired fewer teachers than would ordinarily be expected.

The movement of teachers from school to school in the same district increases from East to West.[6] It is safe to draw the conclusion that, in general, the mobility of teachers from district to district is roughly proportional to the size of the district. It is lowest in the Northeast where districts are largest, and highest in the North Central region where they are smallest.

Central Cities, Other Standard Metropolitan Area Districts, and Others

The relationship between the size of the district and the probability of teachers leaving a given jurisdiction when changing schools is confirmed by the analysis of mobility of teachers by type of school district. Movement between districts is low in central cities, higher in other Standard Metropolitan Statistical Areas (SMSA) (i.e., suburban districts), and highest in the non-SMSA's. By contrast, the movement from school to school within the same district is highest in central cities, somewhat less in the suburbs, and lowest in the non-SMSA's.

The difference in mobility patterns by type of school district extends to other segments of the addition and separation patterns. In academic year 1970-71, the lion's share of new openings through additions to staff in 1970 was in suburban districts. Of the total of 41,000 additional teachers hired, 23,000 were hired by suburban school districts. In other words, the number of teachers in the suburbs

increased by 3.6 percent in the fall of 1970. In the central cities, only 10,000 additional teachers were hired for a net growth of 1.7 percent. The growth of 8,000 teachers in nonstandard metropolitan statistical area districts accounted for 1.1 percent of the total.

On a national basis, experienced teachers are more heavily represented in the central cities. Less than one teacher in 11 was a recent graduate. In the suburbs and in nonmetropolitan areas, one teacher in 10 was inexperienced.

Suburbs appeared to do somewhat better in attracting experienced teachers moving to new jobs than either the central cities or rural regions. Thirty percent of all teachers who came to the suburbs to teach in the fall of 1969 had previously taught in other districts. This compares with 20 percent in the central cities and 25 percent in non-SMSA-located school districts.

One might conclude from these figures that there was a flight of experienced teachers from the central cities. Actually this was not the case. Only 4.5 percent of the teachers in central cities left to find jobs in other school districts, as contrasted to 6.1 percent in the suburbs and 6.8 percent in the non-SMSA's areas. Apparently there was considerably more job switching in noncentral city school districts than in the large central city units. No evidence of a mass flight of teachers from the central cities could be derived from another possible index of teacher disaffection. If one compares the number who took leaves of absence in all three types of school districts with the number who returned, a ratio of roughly two to one (two teachers going on leave of absence for each one coming back) seems to hold for each of the three types of districts.

The job changes by teachers within the school district appear to be roughly proportional to the size of the school district. Teachers starting the school year in a different school within the same school district accounted for 5.4 percent of all the teachers in central cities, 4.0 percent in the suburbs, and 3.5 percent in the non-SMSA's.

Promotion opportunities appear to be slightly better in central cities than in the other two types of school districts. One teacher in 120 in the central cities was promoted to a nonteaching job in education. This contrasts with one in 150 in the suburbs and one in 185 in districts in the non-SMSA's.

Contrary to current impression, the movement out of teaching to nonteaching occupations was lowest in the central cities—less than 1 percent, as contrasted to 1.3 and 1.5 percent in the suburbs and the SMSA's. This is confirmed by using the rates of job shifting outside of education as well as other losses, and there appears to be no consistent flight of teachers from central cities as compared to either the suburbs or nonurban areas.

Schools for Predominantly Disadvantaged Students

One of the reported concerns of parents in ghetto areas is that their children are taught by inexperienced teachers. For the total United States this did not prove to be true in schools where the principals estimated that 75 percent or more of the students were deprived, and where 9.2 percent of their teachers were new as compared to 9.6 percent nationally. In schools where 50 to 75 percent of the students were believed deprived, there were 10.8 percent new teachers, slightly more than the national average.

In schools with 75 percent or more poor children, 24 percent of the teachers added were new. For schools with 50 to 75 percent poor children, 22 percent of the teachers added were new. The national figure was 21.5 percent. This would imply that the total turnover of teachers in "poverty area" schools was a little higher than the nationwide experience, and that teachers leaving were replaced by experienced teachers.

The higher proportion of new teachers to total additions occurred in suburban schools with large poverty concentrations. There the additions and turnover were much higher, especially in schools with large concentrations of poor students where one teacher in seven could be expected to be new. Despite the mythology on the subject, the central cities appear to be managing the staffing of schools which cater to deprived students much more effectively than suburban districts which are probably coping with new influxes of poor children.

Comparison of Elementary and Secondary School Teachers

Roughly half of the new teacher openings occur in elementary schools, and half in secondary schools. In both types of schools, the percentage of teachers who started the school year in a different school from the year before was roughly the same. So were the percentages of newly graduated teachers hired and other additions.

By contrast, the promotions to nonteaching jobs in education were much more frequent among secondary school teachers than among elementary school teachers. Also, the proportion of those teachers who took jobs outside of education was roughly twice as great among secondary school teachers as among elementary school teachers. Other losses from teaching—most of them women dropping out of the labor force to raise families—were 1 percent higher in elementary teaching than in secondary teaching. This is readily explained by the higher proportion of women employed in elementary schools.

HOW MANY NEW TEACHER OPENINGS ARE THERE LIKELY TO BE?

If past mobility and separation patterns continue, some 9.2 percent of all teachers at the beginning of the year are likely to leave the profession and an additional 6 percent are likely to move to a teaching job in another district. In addition, jobs may materialize if (1) the enrollments in public schools increase, or (2) the pupil-teacher ratio continues to decline.

During the school year beginning in the fall of 1969, roughly two-thirds of the 41,000 new openings occurred as a result of enrollment increases, and the other third could be explained by declining pupil-teacher ratios. The major share of openings for newly entering teachers—143,000 out of 184,000—was due to withdrawals of existing teachers from the classroom.

In the period 1970-75, enrollment increases in public schools have been estimated by the National Center for Educational Statistics at 400,000. An alternative projection which assumes a nursery school boom, further reductions in high school dropouts, and drastic declines in private school enrollments, estimates an increase of 2 million. If preschool attendance rates do not go up, it is quite possible that enrollments will not increase at all. *Thus, the maximum increase in demand from enrollment increases alone is no more than 100,000 teachers.*

The future of the pupil-teacher ratio is uncertain. The National Center for Educational Statistics has estimated that much of the decline in the pupil-teacher ratios during the late 1960's was due to additional financing made available by the Elementary and Secondary Education Act, and that in the future the ratios would resume a much slower downward trend. Preliminary results for 1970-71 indicate that the decline may have been underestimated.[7] On the basis of past trends, the pupil-teacher ratios are not likely to improve by more than 7 percent in the course of the next 5 years. *No more than 140,000 teachers are likely to be hired to improve pupil-teacher ratios.*

Another imponderable is the extent to which experienced teachers will be able to find jobs in other school districts. As the supply of new college graduates eases some more, it is quite likely that an increasing number of vacancies will be filled with younger teachers at lower salaries. Some teachers may forego job hopping between districts because of a shortage of openings. Other teachers move from school district to school district as their husbands change jobs, and they may have difficulty finding teaching positions in their new location. While this consideration does not affect the total figures of surplus or shortage of teachers, it does have some bearing on job opportunities for new graduates.

The survey of mobility as previously summarized makes it possible to generalize about the places where openings will occur. The estimates by type of region and school district are indicated in table 7.

The potential supply of teachers is difficult to estimate, largely because many women whose children have grown up and who had previous teaching experience are also likely to seek teaching jobs. In 1959 some 50,000 experienced teachers returned to the classroom. The corresponding figure for 1969 is not available, but it can be inferred that the number of po-

Table 7—TEACHER VACANCIES, BY REGION, TYPE OF DISTRICT, AND LEVEL, 1970–71 TO 1975–76
(In thousands)

	Number of teachers 1970-71	Number of teachers 1975-76	Maximum additions	Vacancies due to withdrawals	Vacancies due to withdrawals and job changes between districts
Northeast	476	522	46	215	322
North Central	595	645	50	324	556
South	639	711	72	302	503
West	351	423	72	157	268
	2,061	2,301	240	998	1,650
Central	614	642	28	311	447
Suburbs	727	871	144	339	583
Nonmetropolitan	720	788	68	348	620
	2,061	2,301	240	998	1,650
Nursery or Kindergarten	69	78	9	36	57
Elementary	1,063	1,095	32	523	824
Secondary	929	1,128	199	439	769
	2,061	2,301	240	998	1,650

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Projections of Educational Statistics to 1980-81* (1971 Edition), U.S. Government Printing Office, Washington, D.C., tables 2, 21, and 26. Estimates for 1970 to 1975 are by Joseph Froomkin, prepared for the President's Commission on School Finance. (Total may not match because of rounding.)

tential reentrants in 1969 was not very different. Some 40,000 more women over age 35 reentered the teaching force than left it in the 1960's.[8] After the relevant attrition factors are entered, the estimated supply from this source is some 50,000-60,000 teachers a year.

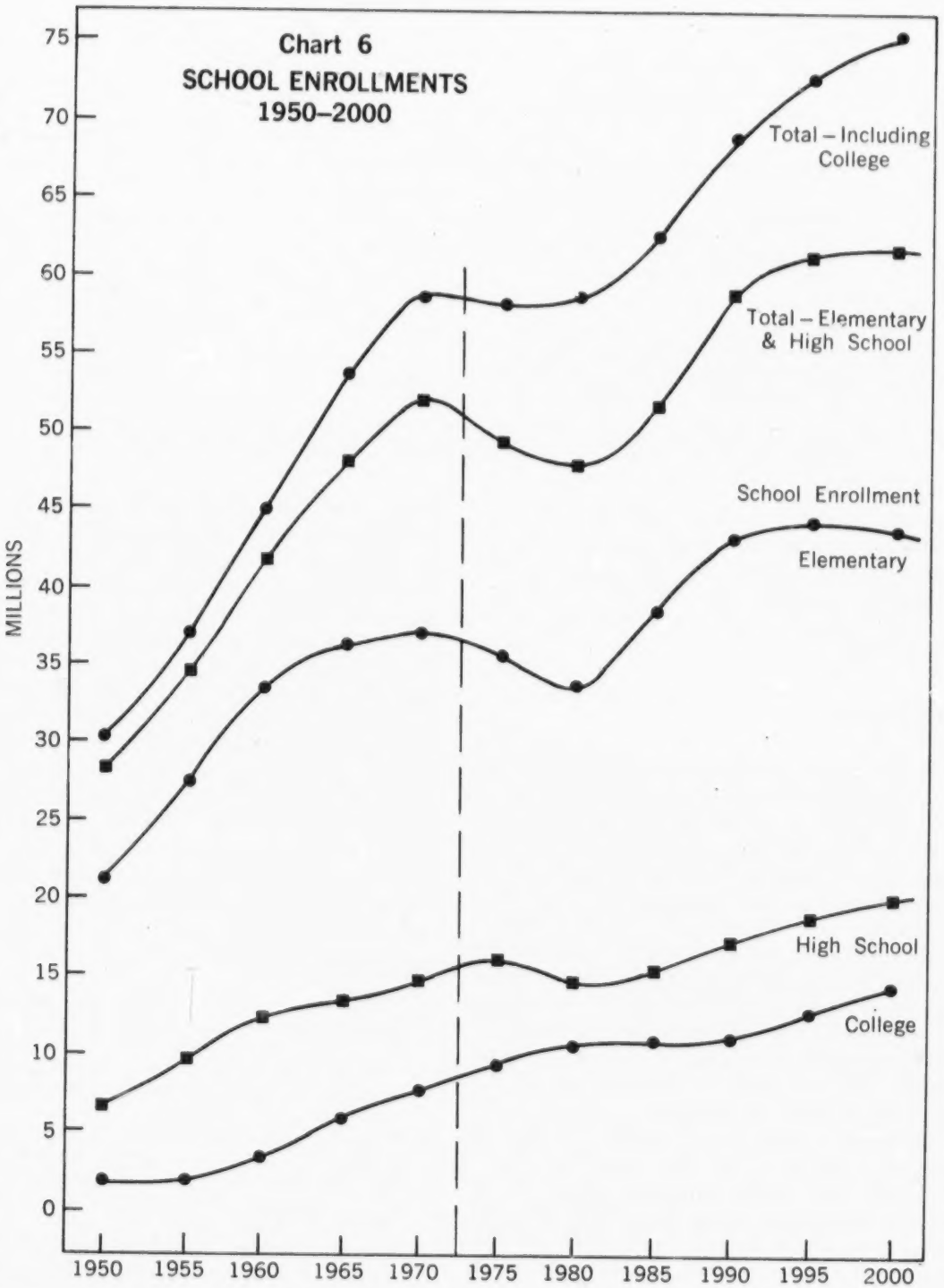
The summary of the total demand for and the probable supply of new teachers appears in table 8. The last part of the table shows the proportion of new graduates who are likely to find jobs. A range is given on the assumption that the present percentage of vacancies filled with new teachers will continue; a second higher ratio is based on the assumption that all of the openings will be filled by new teachers. Finally, a third estimate assumes that new graduates will find jobs in proportion to the total job openings, including those due to teachers moving from district to district. These estimates range between 49 and 92 percent.

In all probability some 60 percent (see table 7) of all newly qualified teachers who will seek jobs in the classroom will get them. It is highly unlikely that new graduates will replace all experienced teachers moving from district to district, though it is possible that some married women who change their residence will not find teaching jobs, and some of these vacancies may go to new graduates.

In total, however, the teacher surplus is likely to be quite large. If the estimates in table 8 are accepted, there will be more than a million too many teachers 4 to 5 years from now. One potential teacher out of three will have to seek a job elsewhere or, in the case of women returning to the labor force, may decide to remain at home. As the surplus builds up, many students will be deterred from entering teacher-preparation programs and will choose other majors—a pattern followed in other fields where surpluses have occurred, notably engineering. Such possible developments are not taken into consideration in table 8 which is based on past trends.

THE 1980'S AND BEYOND

The discussion so far has focused on supply and demand factors for the near future. In the long run, however, the total number of elementary and secondary school pupils—and, therefore, the demand for new teachers—is likely to increase markedly in the late 1980's. The latest Bureau of the Census projections (chart 6) indicate that the current flattening in the enrollment curve is only a pause, not a plateau. If these projections are borne out, we



SOURCE: This chart is based on figures derived from U.S. Department of Commerce, Bureau of the Census, Current Population Report P–25, No. 470, November 1971, Series D population and Series 2 enrollment projections. These assume moderate rates of growth.

Table 8—ESTIMATED VACANCIES AND THE SUPPLY OF TEACHERS, 1970-71 TO 1975-76
(In thousands)

Vacancies:	High estimate	Low estimate
To meet increases in enrollment	100	0
To meet lower pupil-teacher ratios	140	0
To replace teachers leaving education	998	998
	1,238	998
Caused by teachers moving from district to district	652	652
Total vacancies	1,890	1,650
Teacher Supply:		
New graduates likely to seek teaching jobs	2,053	2,053
Older women returning to teaching	300	250
Teachers changing jobs	652	652
	3,005	2,955
Percent of new graduates obtaining jobs:	(Percent)	(Percent)
If all positions filled by new graduates	91	81
If new vacancies filled by new graduates	60	49
If new graduates obtain jobs in proportion to jobseekers	63	56

Source: U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *Projections of Educational Statistics to 1980-81* (1971 Edition). U.S. Government Printing Office, Washington, D.C. High estimates for 1970 to 1975 are by Joseph Froomkin, prepared for the President's Commission on School Finance.

can expect a return of the "teacher shortage" within 15 years. Efforts to alleviate the effects of the current surplus that are based on the assumption of permanent stability in the demand for teachers may therefore turn out to be fallacious.

CONCLUSION

The supply of persons who traditionally seek jobs in teaching is likely to exceed the demand by a million in the first 5 years of the 1970's. It is important that this imbalance in supply and demand not be misinterpreted. Much of it is due to projecting past patterns of employment. These patterns were established during a period of brisk demand for teachers during the 1950's and 1960's. A large number of young women found it convenient to be certificated as teachers by taking a limited number of courses in education. Many found it easy to obtain a teaching job on the strength of these credentials.

Moreover, teaching was a convenient interim occupation between the B.A. and the "Mrs." If other jobs were available, these young women would have taken them. Such jobs are opening up and more will open in the 1970's. Many teachers will switch to other careers or homemaking later in life. As teaching jobs become scarce, the decision to embark on another career will have to be faced earlier in life. Teaching positions as port-of-entry jobs will be harder to obtain and, consequently, many may decide not to be certificated as teachers. In all probability teaching will become a more linear and more consistent career for those who manage to get a position. This change in the character of teaching careers will post new challenges to those who hire and train teachers—challenges which will be intensified by the need to provide enough teachers to meet projected enrollment increases in the late 1980's. In this respect, the "surplus" of teachers offers the opportunity for school systems to be more selective in their recruitment and more demanding in the preparation required.

FOOTNOTES

1. U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, *The 1969 School Staffing Survey of Additions and Separations of Public School Teachers for 50 States and the District of Columbia (unpublished)*.
2. J. Froomkin, J.R. Endriss, R.W. Stump, *Population, Enrollment, and Costs of Public Elementary and Secondary Education 1975-76* and *1980-81*. A report to the President's Commission on School Finance, 1971. See especially section 3.
3. National Education Association, Research Division, *Teacher Supply and Demand in Public Schools, 1970*. Research Report 1970-R14, the Association, 1970, p. 21.

4. U.S. Department of Health, Education, and Welfare, Office of Education, *Education in the Seventies*, U.S. Government Printing Office, Washington, D.C., 1968, chapter 3.

5. There are no authoritative data showing the extent to which prospective teachers are employed in schools outside the region of their teacher-training institution. The figures used here assume that there is no significant interregional migration.

6. U.S. Department of Health, Education, and Welfare, Office of Education, *Teacher Turnover in Public Elementary and Secondary Schools, 1959-60*, U.S. Government Printing Office, Washington, D.C., 1963, p. 13 and footnote 1.

7. Cf. U.S. Department of Health, Education, and Welfare, Office of Education, *Projections of Educational Statistics to 1978-79*, U.S. Government Printing Office, Washington, D.C., 1970, p. 57; and U.S. Department of Health, Education, and Welfare, Office of Education, *Statistics of Public Schools, Fall 1970*, U.S. Government Printing Office, Washington, D.C., 1971, pp. 14 and 16.

8. *Education in the Seventies, loc. cit.*

CHAPTER 4

Office of Education Priorities for 1973

When plans were formulated for the implementation of the Education Professions Development Act (EPDA) in 1968, the Commissioner was faced with the congressional mandate to broaden the constituencies to be served to include school administrators, teacher aides, and other personnel in such areas as special education, early childhood education, and vocational and postsecondary vocational education. As a consequence, some 14 separate national programs were developed, all but one of them discretionary and all funded with relatively limited appropriations in relation to the scope of the needs each was to meet. With 4 years of experience it became clear that the support of so many small, discrete programs resulted in a fragmentation and dilution of limited resources and that the major problems facing the improvement of education in our schools remained. Consequently, it was concluded that a more lasting impact would be gained if an effort were made to link programs and then concentrate funds in given areas where needs were greatest, while maintaining the integrity of each of the categorical programs. This strategy, in a number of instances, has been successful. But experience with it has suggested some important alternative approaches which should be tested.

First, the underlying objective of much of the effort of EPDA programs has been to provide opportunities for educational personnel to receive training, most of it inservice, rather than to devise strategies to bring about change in educational systems. EPDA funds have been largely used for stipends, and the remaining funds have been used to purchase the services of institutions and agencies to provide that training. It was expected that in the purchase of those services certain activities would take place which would bring about institutional changes, both in the preparation of teachers and in the education of children. While some successful changes did take place in the process, it was found that the focus remained on improving individual teachers and not on improving the system in which the teacher teaches and the student learns. Whatever excellent opportunities may have been provided to teachers and other educators to improve their skills and knowledge, the system itself remained basically unaffected.

Second, while most EPDA projects were designed to encourage cooperative arrangements between institutions of higher education and local education agencies and the communities served by them, these arrangements were conceived within a framework of the needs for training educational personnel and not of the larger need to improve the educational system as a whole. The training needs of the teacher, it was found, cannot be defined or met in isolation from the larger process of education, or apart from the problem and situation in which he or she works.

The new thrust for EPDA programs in fiscal year 1973, therefore, calls for an emphasis on systemic or institutional change, specifically the systems which deliver educational services to children and on the management of change and change processes, which will include both controlled and uncontrolled interventions into the system. The education of teachers will not be supported in isolation from the

specific needs and problems of children in given areas but will be designed as an instrument to improve the educational system as a whole.

In addition, the new programs will grow out of a realistic analysis of the needs of children as well as of the organizations serving children as they are perceived by the local communities themselves. Educational personnel of children from low-income families will continue to be a major focus of EPDA efforts.

EPDA will continue to look at the need for educational personnel in areas where critical shortages persist and where there are needs for inservice training to improve comprehensive services to children. The Federal role of supporting exemplary programs which adapt promising products and practices identified through research will continue.

In carrying out these activities, EPDA programs will direct interventions to the actual working environment; training designs and strategies will be developed in the regular school settings and with the help of instructional personnel from higher educational institutions, so that they are related to the solution of existing problems. The EPDA effort will be defined by the need of the site itself and not by a generalized understanding of needs and problems.

These plans will be implemented in fiscal year 1973 by a regrouping of EPDA resources. A number of programs will be phased out, but the multiyear projects with definitive commitments will be continued. At the time these plans were being made, the Congress passed the Education Amendments of 1972. These amendments prescribed certain directions for EPDA efforts:

First, authority was provided for a program for Undergraduate Preparation of Educational Personnel (UPEP). This is the first time the Congress has authorized the support for innovative efforts in the regular undergraduate programs for prospective teachers; both NDEA and EPDA programs have been limited to "advanced training." UPEP is being designed as a demonstration program to develop and test possibilities for the reform of the undergraduate education of teachers at various types of undergraduate colleges and universities. It will attempt to seek alternative answers to these needs: (1) the fractionalization of responsibility for the education of teachers among the schools of education, the arts and sciences, and the school systems; (2) the inadequacy of the professional sequence, particularly the practicum or practice teaching which the prospective teacher receives; (3) the failure to rationalize recruitment, screening and counseling, and evaluation for prospective teachers; and (4) the lack of parent and other community participation in the development, design, and implementation of programs for educating teachers. The program will not support the training of individual teachers or purchase the services or the resources of institutions of higher education. Its client, and the object of the reform, is the institution of higher education itself and those school systems where the prospective teacher receives practical experience.

Second, 5 percent of the funds appropriated annually for parts C and D must be set aside for bilingual education. These funds will be used to continue and to expand upon bilingual education efforts already begun under EPDA. The program will support the training of education personnel for schools which use two languages as mediums for teaching and learning all or a significant part of the regular experiences and subjects of the curriculum. The languages are English and the mother tongue or home language of the target pupils. Its purpose is to make a substantial contribution to Spanish, Indian, and other groups in learning how to teach various subjects in their own languages, in learning how to develop and use teaching materials in their own languages to transmit the best of their native culture to children, and in learning more about the nature of language and language learning and teaching.

Third, a 5 percent set-aside from part D of EPDA was provided for the inservice and preservice training of persons serving as teachers in schools for Indian children operated by the Department of the Interior. The funds, to be administered by NCIES in OE, will involve NCIES, the Bureau of Indian Affairs (BIA) in the Department of the Interior, and the new Bureau of Indian Education (BIE) in OE in jointly identifying program needs, establishing priorities for funding, and soliciting grants and contracts to meet those needs and priorities. While the three agencies would

together review and recommend projects, final approval would be made by BIE. The educational training areas established as program priorities are as follows: innovative training and development for school boards in mission, in Federal Board, in Indian contract, and in public schools operated by Indians; school administrators, particularly American Indians; teachers and related staff in special educational efforts to update knowledge and skill in educational trends and specific content areas.

Fourth, not less than 5 percent of the total appropriation for the EPDA will be set aside for graduate fellowships and university-based training programs. This part of the act was last used for a national program in 1968-69 (Prospective and the Experienced Fellowship Programs and the Related Institutional Assistance Grant Program), to continue an effort set up prior to the implementation of EPDA. The essential purpose of the legislation is to improve the qualifications of actual or future school teachers "by awarding fellowships for graduate study at institutions of higher education and by developing and strengthening programs for the education of teachers and related educational personnel in institutions of higher education." Projects may cover many categories at several levels, including preschool, postsecondary vocational only, adult, and a broad variety of areas such as child development, bilingual, counseling, media, school social work, school nursing, library services, special education, "returnees" to the profession, administration, and prospective teachers. Because part C is a small program it will require meticulous husbanding of funds with an eye to maximum impact from minimum investment. The emphasis will be on preparing educators to become leaders in the systemic educational reform which is the focus of NCIES efforts. The 35-40 programs to be supported in fiscal year 1973 will be at universities which are ready to work out the program with one or more school systems or other local agencies directly responsive to locally assessed needs. Selection of the fellows will be made jointly with the cooperating agencies; the program will include a comprehensive practicum for the fellows.

In addition to these congressionally mandated programs, several other thrusts are planned. One of the 14 programs under EPDA was Special Education, a program designed to prepare regular classroom teachers to deal effectively with handicapped children enrolled in regular classrooms, Seven of the 23 projects supported initially will be continued in fiscal year 1973. In addition, an effort will be made to develop and disseminate teacher training materials for regular educational personnel for their use in teaching exceptional children. Developmental assistance will be provided to those educational agencies interested in training educational personnel to educate exceptional children in the regular classrooms. The program will also respond to requests from States and school systems which are being required by court order to integrate exceptional children into regular classrooms (such decisions have recently been made in the District of Columbia, Massachusetts, Pennsylvania, and California). Finally, the Exceptional Children Program will help to integrate special education concepts, skills, and techniques into all Career Opportunities Programs and Urban/Rural projects.

In light of lessons learned, the Office of Education has moved over the past few years to construct networks of interested educators from all levels of the educational system, and from all parts of the Nation to stimulate the consideration and diffusion of promising ideas. These efforts go beyond the dissemination activities of the past which often have been limited to the distribution of reams of printed materials—hopefully to be read and perhaps digested. EPDA will concentrate on the kinds of constant interchange which experience has shown are necessary to build momentum for change.

An example of this type of activity is the network which has been based on the former Trainers of Teacher Trainers (TTT) Program in the National Center for the Improvement of Educational Systems. The TTT Program, which brought together educators from institutions of higher education and from local education agencies, is proving to be a valuable template for these kinds of cross-boundary interchanges for sharing new ideas.

In addition to these efforts, six of the original EPDA programs will be continued: Career Opportunities, Urban/Rural Development, Vocational Education, New Careers in Education,

Educational Leadership, and Pupil Personnel Services.

Career Opportunities Program (COP). Now entering the fourth year of its present 5-year program in 130 school districts throughout the country, COP is training individuals, including residents of low-income communities and veterans of the Vietnam era, for services in the Nation's schools. The requested sum of $23,572,000 will provide support for approximately 8,000 participants.

Urban/Rural School Development. This program effort is a means through which comprehensive programs of training and development for the staffs of individual schools or clusters of schools are designed by school-community councils, thereby involving both the procedures and consumers of educational services. The request for $12,135,000 will provide support for training approximately 6,500 teachers and staff members, in cooperation with colleges and universities at 40 local school sites.

Vocational Education. The $11,860,000 earmarked for the support of State and local education agencies, as well as institutions of higher education, to strengthen the recruiting and training of individuals for career education will be implemented through grants to all 50 States and to those universities and colleges which offer State-approved graduate study in vocational education.

New Careers in Education. The purpose of the $500,000 which is to be spent for implementing section 504, part A, EPDA, is to attract to the field of education persons such as artists, scientists, homemakers, and others who would ordinarily not enter it. This is required by the Education Amendments of 1972.

Education Leadership. This program, which is being phased out, will have approximately $4.0 million in fiscal year 1973 to complete the second or third year commitments on some 23 multiyear projects. Major emphasis is given to the National Program in Educational Leadership (NPEL), which is centered at Ohio State University with cooperating institutions in various areas of the country. It is directed at the identification, recruitment, and training of talented individuals who have no prior work experience in school systems for positions as school administrators. Additional emphasis is given to the city/university projects which combine inservice and preservice training to help the schools improve themselves and to help university training programs by using the city schools as laboratory settings for solving problems.

Pupil Personnel Services (PPS). This program, which is also scheduled to be phased out, will have $3.6 million in fiscal year 1973 to finance its continuing commitments to the nine national centers and their affiliated satellites. The purpose of PPS is to improve the quality of those serving as pupil personnel specialists (counseling and guidance personnel, school psychologists, social workers, and school nurses) and to strengthen the programs of training institutions which prepare such personnel and the schools which employ them.

EPDA authorized two other programs: Teacher Corps and part E for graduate-level training for college teachers.

Teacher Corps. The administration has recommended the transfer of Teacher Corps to the ACTION agency, but as of December 1972 Congress has not acted on this recommendation.

As Teacher Corps increasingly treats the problems of training teachers in a total school environment through innovative school organizations, it becomes evident that upgrading the skills of regular teachers must receive new attention. It is presently envisaged that this emphasis will be translated into a markedly heavier stress on retraining teachers already in the classroom with proportionately fewer resources earmarked for training new teachers.

At the same time, Teacher Corps will help to fulfill the Commissioner's objective of ending the isolation of children with learning and behavioral problems. Teacher Corps projects will be required, starting in fiscal year 1973, to implement comprehensive designs for training in special education to enable members of Teacher Corps instructional teams to provide instruction for such children in regular classroom settings. Throughout the year, as it has since its inception, Teacher Corps will support those projects which are devised to expand the learning opportunities of children and improve the training and certified and prospective teachers. Such plans will combine new curriculum developments with team teaching, more individualized instruction, and strategies for disseminating this experience throughout en-

tire school systems. Local education agencies, institutions of higher learning, and representatives from communities where Teacher Corps projects are located will collaborate in implementing this design.

Teacher Corps will, through its program development activities, increase its technical assistance to projects which experience problems in implementing Teacher Corps objectives. In addition, Teacher Corps will continue its emphasis on addressing the needs of the disadvantaged. The Volunteer Teacher Corps encourages high school and college students, parents, and other community residents to serve as tutors or instructional assistants for children in disadvantaged areas.

Part E. During fiscal year 1973, the part E program—the Office of Education's effort to encourage improvements in the quality of college teaching—will remain focused on three priority areas: junior colleges, low-income students, and developing institutions. The area which will be given the highest priority will be programs to train at the graduate level higher education personnel who will serve the needs of low-income and minority students. This effort will continue and build on earlier commitments in this field.

In line with this focus, there will be some increase in support for institute programs to train college teachers to teach remedial reading and related skills to students who lack the basic tools required for a successful college experience. This effort is part of the broader Right-To-Read program in the Office of Education. In addition, programs to train college personnel to work with low-income students will deal with: (1) student financial aid; (2) student personnel services, including counseling, career placement, and the special problems involved in recruiting and training low-income and minority students; (3) using teaching methods, such as individualized instruction, which are known to be effective in helping students with academic deficiencies; and (4) acquainting educators with the culture, attitudes, and life experiences of these students.

Aside from these three priority areas, the part E program will seek to address itself to additional areas of concern during fiscal year 1973: notably, efforts to improve higher education personnel training; increase the number and preparation of women entering or reentering graduate education for careers in higher education; and improve communication between faculty, students, administration, and, wherever appropriate, local communities in the planning and implementation of proposed programs. In addition, there will be limited support for projects in the educational fields of environment and drug abuse.

APPENDIX

Programs for the Training of Educational Personnel Under the Education Professions Development Act, 1969-71

The first Commissioner's Report on the Education Professions published in 1968 included a summary of Federal programs which train educational personnel for fiscal years 1966, 1967, and 1968. The Commissioner's 1969–70 report included descriptions of program activities during the 1969 and 1970 fiscal years. For this report program information focuses on the 1971 fiscal year and includes plans for fiscal year 1972, which covers the 1972–73 academic year.

In education, as in many other areas of social need, the Federal Government has been faced with the problem of attempting to meet virtually unlimited needs with limited resources. The training of educational personnel in the United States is a multibillion-dollar business; expenditures of the Office of Education for this purpose, however, are approximately $300 million. In order to avoid wasting resources on a welter of separate programs, the Office of Education has tried to address a limited number of priority concerns in education professions development. Seeking to achieve the maximum payoff for resources expended, the Office has conceived its role as that of a catalyst for needed change.

Change of some sort in personnel training is vitally needed. The Education Professions Development Act of 1967 resulted from a deepening concern about the education of America's teachers. This concern has increased in the past few years. The growing array of critics charges that preservice and inservice training has often been diffuse, contradictory, and unrelated to the realities of the outside world—it has been, in a word, mediocre. Only the Federal Government has the scope and resources required to stimulate systemic reform on more than a piecemeal basis.

Those who seek to improve the quality of teacher education must confront an array of unpalatable charges. Among the most salient are the following:

—Preservice and inservice training are usually isolated from one another, as are also the universities which prepare teachers and the school systems which employ them.

—About 60–80 percent of a teacher's undergraduate education is provided by professors in the traditional academic disciplines. These professors often have little concern for the nature and problems of teacher education; they consider teaching to be a second-rate vocation and the schools of education to be the last resort for academic failures.

—Many professors in schools of education neither know of nor care about the problems involved in teaching academic subjects in a way that will enable students to communicate, as well as to accumulate, knowledge.

—Most faculty, including those in schools of education, are hired on the basis of criteria which do not include a demonstrated ability to teach.

—Teacher training programs rarely provide for involvement of the communities served.

—Few teachers are given the specialized

training needed to teach minority group and inner city children.

—Student teaching, the only practical experience which most prospective teachers receive, varies widely in effectiveness; is seldom tied closely to academic study; and comes too late in the student's academic career to enable him to reconsider his career choice.

—Inservice programs are often nighttime versions of full-time academic studies; they lack a clear focus and rationale of their own.

—The size, diversity, and complexity of the American educational system increases tendencies toward inertia. While these conditions make cooperation more essential, they also make it more difficult to achieve.

In dealing with this situation, however, the Office of Education has had neither the legislative authority nor sufficient appropriations to make a concerted attack on these problems, which, of course, exist largely at the undergraduate level. Moreover, the teacher shortage came to an end soon after the passage of the Education Professions Development Act (EPDA), and, therefore, no attempt was made to train massive numbers of new teachers, or fundamentally change preservice teacher education, an approach which in any case would have been ineffective because of funding limitations. Consequently, the Bureau of Educational Personnel Development—now the National Center for the Improvement of Educational Systems (NCIES)—set up to administer most of the provisions of the act, has stressed the inservice education of teachers already in the classroom, particularly teachers in areas which the bureau had identified as deserving priority concern.

Federal efforts in educational personnel development have taken a variety of forms. Some of the programs of the Office of Education have involved formula grants with teacher training components; the major focus of these grants, however, is the educational program in the school. Notable examples are title I and title III of the Elementary and Secondary Education Act of 1965, which provide about $20 million for inservice training. In addition to these programs, the Commissioner has at his disposal discretionary programs which he can target in order to improve the teacher education system by concentrating on selected needs and problems. OE support of most of these activities is administered by NCIES. It should be noted that these discretionary programs are directed to clear-cut priorities, and as such address the entire teacher education system by concentrating on selected points of influence. It is these discretionary programs on which the Commissioner must rely as instruments of change.

MAJOR TRAINING EFFORTS

In the area of professional development for elementary and secondary education, the efforts of the Office of Education address four major goals:

1. To improve the education of children from low-income families.
2. To reinforce the preparation of all educational personnel.
3. To help meet critical personnel deficiencies.
4. To meet special needs by developing and testing specific solutions.

To Improve the Education of Children From Low-Income Families

Three different USOE programs, embodying distinctive strategies, are directed toward achieving this overriding national objective. They are Teacher Corps, the Career Opportunities Program, and the Urban/Rural School Development Program.

Established by Congress in 1965, Teacher Corps joins experienced teacher-leaders with interns in a unique pattern of teacher education. The primary purpose of Teacher Corps is not to produce more teachers, but to help institutions train and retrain better teachers by improving their professional preparation and career growth. Especially in the past 2 years, Teacher Corps has encouraged local long-range planning for developing and adapting competency-based teacher education and other new educational ideas to teacher-training programs. These approaches are being used increasingly by school systems, State education agencies, and institutions of higher

education alike. Modular patterns of instruction, personalized learning, systems approaches to planning and management, performance-referenced criteria for measuring competency and recommending certification, field-oriented training, vanguard schools—all of these new concepts are beginning to make an impact on the traditional business of education. Teacher Corps has played an important part in bringing about these changes, the long-term significance of which is only beginning to become apparent. Teacher Corps projects have served as vehicles for the dissemination of promising ideas developed through the National Center for Educational Research and Development (NCERD), the Office of Education regional laboratories, and other sources of innovation. Cooperative Teacher Corps projects have involved linkages with projects funded under the Peace Corps, Model Cities, the Office of Juvenile Deliquency, the Bureau of Education for the Handicapped, the Follow Through and Career Opportunities programs, and others.

Individual Teacher Corps projects act as temporary organizations within a given locality designed to facilitate coalitions among colleges, school districts, State agencies, and the communities served. Such coalitions assess needs, determine common goals, and locate resources to mount a concerted effort that will last well beyond the life of Teacher Corps projects and create more effective means of education. The means emphasized by Teacher Corps projects are intended to change entire educational systems, to increase the use of the total learning environment, and to encourage institutions to improve their teacher training.

During fiscal year 1970 and 1971, Teacher Corps projects have pursued a wide variety of activities. Projects are serving populations in urban poverty centers, on Indian reservations, in other rural areas, in correctional institutions, and among children who speak little or no English. A majority of the projects involve early childhood education (especially in States which are beginning or expanding their kindergarten or preschool programs)—and education for early adolescents (particularly in districts developing new middle-school programs). All projects have attempted to foster greater cooperation between schools and the neighborhoods they serve through such means as volunteer-assisted learning projects (including both parents and student tutors) and new types of school-neighborhood associations.

Institutional change is hard to measure, but the evidence has shown that the Teacher Corps' approach does work. Project staff are acquiring increasing skill in planning, managing, and analyzing progress and in taking corrective steps toward achieving their goals. The majority of universities involved have increased the percentage of time their students spend in the field; many of these schools have begun the development of substantially different instructional designs evolved from competency-based approaches. At the same time, school districts have increased their involvement with parent and community groups. As a result of corpsmembers' efforts in cooperation with local staff, many districts have moved toward increased amounts of individualized instruction and the use of a broader variety of cultural materials.

Increasing evidence shows that the corpsmembers themselves are unique. The teachers graduated from Teacher Corps projects in 1968, 1969, and 1970 are staying in education, particularly in poverty-area schools, at rates well above national averages. Many team leaders have moved on to roles as supervisors, administrators, and master teachers. Teacher Corps, furthermore, has been able to attract increasing percentages of minority group interns, up from 47 percent in 1969 to 55 percent in 1970.

The Career Opportunities Program (COP) was created in 1969 as a nationwide career development model. COP was based on the premise that the education offered to children of low-income families can be improved by entry into the schools of more talented, dedicated low-income adults. In addition, the adults would thereby receive opportunities for advancement in education not otherwise available. Serving as educational auxiliaries to librarians, media specialists, or counselors, these adults have the firsthand understanding of the students' needs which is necessary if educational achievement is to be improved. COP works through a "career lattice." This concept allows participants to move from paraprofessional positions upward to attainment

of baccalaureate degrees and eventual full teacher certification, or laterally to other aide positions. It should be noted that many of the present COP participants, at the time of their selection for training, were employed in dead end teacher aide positions before COP opened new avenues for career advancement.

During the 1969–70 academic year, Office of Education staff and State education agency COP coordinators helped design some 130 projects. In 1970–71, the first full year of operation for COP, these projects became fully operational. All projects have combined inservice experience with academic training at cooperating colleges and universities.

The progress of the Career Opportunities Program up to the present can best be illustrated in relation to the six COP objectives:

1. *Improving the education of low-income children.* This is the central objective for COP, and one of the major priorities for the Office of Education as a whole. All COP projects are located in poverty area schools and linking Federal moneys are being contributed by other programs (ESEA title I, Head Start, Model Cities, etc.) in order to achieve the maximum amount of coordination. Impact evaluation is now being initiated after the program's first full year of operation. One of the first analyses has come from Louisville, Ky., where suspensions in a project senior high school have decreased by 59.7 percent, compared to an increase in a nonproject senior high school of 45.5 percent. The same study showed that dropouts in a project junior high school fell by 55 percent.

2. *Attracting low-income people and Vietnam-era veterans to new careers in schools serving low-income areas.* Almost all (97.3 percent) of the COP participants are low-income and are residents of the community being served. Eleven percent of all COP trainees and 60 percent of male trainees are Vietnam-era veterans. Emphasis is now being placed on the further recruitment of veterans to fill new training slots scheduled to open during the 1971–72 school year.

3. *Finding better ways to utilize school staffs through the development of career lattices.* Career lattices, encompassing all levels from the high school student participating in a "youth-tutoring-youth" program through the fully certified teacher, exist in all COP projects. In addition to upward mobility, these lattices allow horizontal or diagonal movement to such specialties as library aide, health aide, or home-school counselor. These lattices are being integrated into the personnel and salary structures of local school system, with an increasing share of COP project funding coming from local revenue. Each career lattice, it should be noted, is unique to its own project; e.g., COP projects on Indian reservations in South Dakota fill educational gaps which simply do not exist in urban areas. One reflection of the success of the career lattice idea is the increasing use by participating schools of differentiated staffing—especially in connection with informal team teaching approaches. A career lattice provides people with diverse specialties at various levels of expertise. The COP participant performing certain educational tasks in the classroom allows the teacher to spend more time on planning, diagnosis, and individual instruction. In this way, COP has exerted powerful leverage for educational improvement.

4. *Encouraging greater participation by parents and the community.* Average community representation on the typical COP council, which advises local project management on all COP operations, ranges from 40 to 50 percent. In a total of 62 sites, the council played a part in selecting the project director. In 21 percent of all COP sites, project directors are from the community being served. COP community councils are involved in the recruitment and selection of participants. Once chosen, these participants themselves are an essential bridge between the school and community.

5. *Finding better ways to train personnel for schools.* Students, parents, school administrators, and teachers have recognized that present teacher training methods have not prepared educational personnel for the realities that face them once they are on the job. COP seeks to establish vitally needed relationships between inservice training and counseling and the skills participants need to perform their functions in the schools. Sixty-three percent of COP's funds go toward this training, which 210 cooperating institutions of higher education are tailoring directly to the participants'

needs and, in many cases, subsequently incorporating into their regular teacher training curriculums. COP trainees are given an average of one-fifth of the work week in "released time" for special inservice or academic training. They earn an average of 26 semester hours of credit per year; some of these credit hours are awarded for experience gained in the classroom. A further effort toward better training is involved in the assignment of one "team leader" for each six participants within a project. This team leader is usually a teacher who has special characteristics qualifying him or her as counselor, advocate, and trainer for the COP aides. In some projects, the team leaders have received college faculty positions enabling them to participate in COP's academic training.

6. *Increasing cooperative relationships between related programs and institutions.* COP is intended to act as a catalyst for needed change in low-income schools. In this context, it has been vital that COP efforts be linked and coordinated with those of other Federal, State, and local programs working toward the same end. Cash and in-kind linkages between COP and these other programs have helped increase the effectiveness of each.

The Urban/Rural School Development program provides retraining to the entire faculties of selected schools in urban and rural disadvantaged areas. The objective of the program, like that of COP, is to improve the quality of education in schools serving low-income families. The two programs, however, employ different means to achieve this common end. COP attempts to change instructional practice by injecting fresh talent into the schools (paraprofessionals from the surrounding community). The Urban/Rural program, on the other hand, is designed to improve the overall effectiveness of inservice efforts by retraining existing school faculties at their own schools. This effort is based on the idea that a given school faculty is more than the sum of its parts—that by aiding the faculty as a unit it is possible to generate spin-off effects and cumulative changes which will continue long after the Federal contribution ends.

The program is almost evenly divided among city and rural sites. Each site may consist of one or more schools, depending on local conditions. Operative since April 1971, the program had set up 38 projects by the end of fiscal year 1971, involving an expenditure of $7.472 million.

To Reinforce the Preparation of All Educational Personnel

Two programs, Training of Teacher Trainers and Training Complexes, focused on the accomplishment of this objective during fiscal years 1970-71.

The Training of Teacher Trainers (TTT) program is concerned with the faculty members in the disciplines and schools of education who are engaged in providing training for future elementary and secondary school teachers and advanced graduate study for others who will become trainers of teachers.

Sixty to 80 percent of the prospective teacher's undergraduate "teacher training" is taken in liberal arts subjects. Much if not most of the experienced teacher's inservice training is similarly oriented toward the academic disciplines. And yet, dozens of recent studies attest that inadequate teacher preparation is partly responsible for the failures of the school system. The reasons behind the inadequacy of teacher preparation are several.

First, the scholars in the disciplines have not been trained as teachers. Their concern is largely with research in their own fields and as a group they have manifested little interest in the business of training classroom teachers. This situation is unfortunate; for while it is true that teachers must be more than technicians, effective teaching does require a command of up-to-date teaching techniques. Second, there has been little communication between the liberal arts and teacher education sectors of institutions of higher education. Third, the education faculty whose original role was to provide the prospective teacher with classroom methodology has increasingly concerned itself with educational research, little of which has had any influence on the development of new training programs for beginning teachers. Fourth, inservice training in the school systems has generally been held in low esteem. When conducted cooperatively with colleges and universities, such training does not utilize all available institutional resources which could pro-

vide invaluable feedback about the needs of schools. Such feedback, if it existed, could then influence regular preservice training.

In order to correct such deficiencies, NCIES' Training of Teacher Trainers program was set up to improve the teaching skills of the "gatekeepers" who train most of the Nation's teachers. By concentrating efforts on this relatively small and strategically placed group, TTT is able to multiply the effectiveness of its resources and efforts. Its basic objective has been to support cooperative efforts involving the liberal arts and education faculties, the schools, and the communities they serve in order to do what had not usually been done well before—to train teachers to teach. The level of support has never been designed to directly affect a major portion of those institutions which regularly graduate substantial numbers of new teachers. Rather it has always been viewed as a developmental program based at colleges and universities which seemed ready for institutional change—change expected to endure long after Federal funds are phased out. Many of the projects produce a multiplier effect by selecting participants from among faculty members nominated by other institutions which train teachers. Such participants, often at the postdoctoral level, are selected only if their institutions commit themselves to implementing change based on TTT concepts once the participants return.

The TTT program began with pilot activities during the 1969-70 school year. The 1971-72 school year marked its second year of full-scale operation. Over the past several years TTT has put increasing emphasis on establishing centers to bring together educators from colleges and universities, State educational agencies, and school districts in order to mount comprehensive efforts to change the teacher education system.

In fiscal year 1971, 33 TTT projects were funded at a cost of $10.3 million. There are 5,700 participants, of whom about 40 percent receive Federal stipends. Most of the projects are conducted at major institutions, including several of the most prestigious in the country. Five of these institutions rank among the first 25 major producers of initially certified teachers.

All TTT projects include practicum training in the schools, where college and university faculty members encounter the realities of today's classroom. With the staff of these schools, and often with strong community participation, they plan new programs to overcome the inadequacies of present training. Since TTT is vitally concerned with the improvement of the education of economically disadvantaged children, most practicum sites are in low-income areas and the training in many projects focuses on the problems of cities and minority groups.

A basic premise of TTT is that change begins at the top. Thus, TTT projects seek to recruit high-level teacher trainers who administer or can otherwise influence teacher-training programs. Participants include college and university faculty at both graduate and undergraduate levels in arts and sciences and education, college administrators, deans, department chairmen, and State and local school system leaders (i.e., superintendents and State or districtwide directors of curriculum or staff development). It is expected that with their support, concepts successfully developed and implemented in the TTT program and its projects will be institutionalized as ongoing activities which no longer require Federal funding.

Some TTT goals for reform are:

—Acceptance by the academic disciplines of joint responsibility with the departments and colleges of education, the school systems, and the community for teacher education.

—Certification by all appropriate sectors of the university of a teacher's competence to teach in a particular field or fields and at a specific level from kindergarten through graduate school. Concurrent development of strategies by State education agencies to change certification requirements in the direction of performance-based criteria.

—Modification of the university's reward and prestige system to equate good teaching and dedication to the problems of teacher training with research scholarship; formal changes in the requirements for graduate degrees, both in education and academic disciplines, to permit degree can-

didates to direct the full strength of their scholarship to the problems of teacher training and learning in the schools.

—Allocation of high priority in school systems to teacher training and retraining, including released time for teachers to participate in training activities at the university or in the community.

Institutional reform cannot be accomplished in 2 years. However, signs of progress have been noted. A few of the changes that have taken place are:

—The University of Chicago, Clark University, and Northwestern University now award credit toward the Ph.D. degree for practicum activities in the schools and communities. As a result of TTT, Chicago now requires practicum experiences for all doctoral students in teacher education. More than half of the TTT projects have established training-oriented doctorates as alternatives to research-oriented doctorates.

—At Michigan State University, which graduates the largest number of students in the Nation eligible for certification, graduate and undergraduate professors and doctoral students participating in TTT now spend at least 80 percent of their time in the schools and community. The TTT project in North Dakota has played a significant role in supporting activities in the University's New School of Behavioral Studies in Education in a statewide effort to improve the qualifications of teachers and introduce the open classroom concept in the elementary schools.

While TTT's primary focus has been on the graduate faculty who teach those who will become the trainers of teachers, it has involved and affected those responsible for undergraduate teacher training. A proposed new program, Undergraduate Preparation of Educational Personnel, will allow the Office of Education to encourage further reform at this level, which is in critical need of change, particularly since most teachers enter the classroom without further graduate study after attaining the baccalaureate. While the TTT program concentrates on improving preservice education, another program, Training Complexes, is directed to improving the quality of both preservice education and inservice training for teachers already in place.

To Help Meet Critical Deficiencies

The focus on teacher trainers, with its promise of maximizing the ultimate effects of Federal efforts, animates other NCIES programs which address specialized needs. Some of these fields—special education for example—have undergone great changes in philosophy and techniques in the past decade. Others—such as pupil personnel services—are still in the midst of difficult adjustments to new conditions. All involve complex training. All have been, and for the most part still are, short of personnel. All of the personnel training efforts in these fields stand in need of new resources, ideas, and techniques in order to keep pace with society's changing demands. The Federal role in these areas has been that of a catalyst for change.

The Pupil Personnel Services program, for instance, supports projects designed to improve the qualifications of those who train and supervise future and present counselors, school medical staff, and other ancillary personnel. The program also seeks to develop better training models which utilize new sources of training talent and bring about organizational change in the training institutions and school systems.

The basic goals of the Educational Leadership program are to increase the quality of elementary and secondary school administration and to encourage the development of new training approaches and new administrative techniques. Educators generally agree that school administration is one field which could reap immediate benefits from the infusion of new skills and resources from persons with diverse career backgrounds The Educational Leadership program gives special priority to the training of administrators from minority groups. The general aim of the program is to synthesize the efforts of all agencies involved with schools in an interdisciplinary effort to train present school personnel, as well as persons just entering the field of education. Although the program does not dictate major

curriculum changes, these often have been a concomitant of funded projects.

Another specialized field in which quantitative shortages still remain despite the recent end of the overall teacher surplus is early childhood education. The explosive growth of kindergarten and prekindergarten enrollments in the past decade has led to an enormously increased demand for personnel with specialized training in this area. Equally as important, methodological developments have revolutionized theories on how to educate the very young; even more than in other fields of education, yesterday's knowledge is obsolete today. The purpose of NCIES' Early Childhood program is to increase the quantity and improve the quality of personnel specifically trained for working with preschool and early elementary-aged children. The program has encouraged the development of conceptual models for the training of early childhood specialists. These models have stressed interdisciplinary programs as well as closer relationships between universities and school districts. Like other NCIES programs, the Early Childhood program has stressed the training of teacher trainers. In this connection, it has developed close linkages with other Federal programs in the early childhood fields, such as Head Start and Follow Through.

Vocational education is another field which suffers from persistent deficiencies. Teacher training in vocational education is too often characterized by lack of imagination, neglect, and rigidity. The major objective of NCIES' Vocational Education program is to improve the quality and effectiveness of instruction of the Nation's vocational education courses. The integration of vocational and other educational programs into a meaningful pattern of career education is an urgent matter of national concern. To meet this need, the Vocational Education program supports two types of activities under part F of EPDA: selected institutions of higher education are given grants to support doctoral work for prospective leadership personnel, and State boards of vocational education are given funds to train personnel for the schools, and for junior and community colleges.

Approximately 70 percent of the handicapped children in the United States who receive education at all are in regular classrooms and are taught by teachers who are seldom trained to help such children. The focus of the Special Education Training program within NCIES is on these regular classroom teachers (specialists in special education are assisted by the Bureau of Education for the Handicapped). The program is designed to enable handicapped children to achieve their highest potential by counteracting the classroom conditions and attitudes that have a negative effect on learning. A longer range objective is to modify the curriculums of regular teacher education programs so that their graduates will be better prepared than they are now to work with handicapped children.

To Meet Special Needs by Developing and Testing Specific Solutions

Events of the past few years have clearly shown that the educational and social problems created by segregation do not end with the first steps toward integration. The coming of desegregation is usually uneven at best; even where a substantial degree of desegregation has been achieved, a lingering legacy of interethnic and cross-cultural misunderstanding persists. In addition, the end of formal segregation has all too often led to a tragic waste of human resources as many educators—mostly black but also including some whites—have found themselves fired, transferred against their will, or placed in unsuitable positions. The Teacher Training in Developing Institutions program (TTDI), formerly Teacher Development for Desegregating Schools, attacks this broad range of problems. The program has attempted to improve the preparation of educational personnel who have been or will be serving in recently desegregated schools, especially those personnel who have been or may be displaced by the school desegregation process. TTDI has had three major objectives:

1. Through inservice training, to increase the subject matter and professional competence of teachers, especially in such areas of critical need as early childhood education, reading, mathematics, and Afro-American studies.
2. To prepare these teachers to work in interethnic settings.

3. To enhance the capabilities of institutions providing preservice education.

Projects have included short-term institutes as well as longer term graduate fellowship programs. Participants in the institutes have been given team training and are expected to conduct training sessions for other personnel in their home schools. In fiscal year 1973, the focus on training personnel for desegregated settings will be reduced, while the emphasis on installing innovative reform in the teacher training programs of developing institutions will be increased.

Progress toward assuring equal access to the benefits of education for all of the Nation's children—a continuous if sometimes slow and halting progress—has been one of the major themes of the decade just passed. However, a more somber note has been struck by the spread of drug abuse. This complex problem defies simple nostrums or quick remedies. Education—the dissemination of information about the nature of drugs—is essential if the drug plague is to be brought under control. An astonishing amount of drug abuse and addiction stems from basic ignorance about the effects of the drugs being used; many addicts who want to shake their habit are unfamiliar with ways and means to do so; and many individuals and communities remain unaware of the symptoms, causes, or effects of drug abuse.

In order to remedy these conditions the Drug Abuse Education program provides the States with the opportunity to participate in a nationwide teacher-training effort. As is the case of other programs, limited resources have caused this program to emphasize its role as a catalyst for other efforts on the State or local level.

All of the aforementioned NCIES programs have had a number of common threads. All have two major objectives—to promote equal educational opportunity and to stimulate institutional change. In practice these two objectives have proved to be inseparable. It is difficult to imagine how any Office of Education (OE) program can begin to solve the myriad problems involved in educating the educationally disadvantaged without at the same time changing prevailing modes of education, including teacher education. Meanwhile, the needs of the disadvantaged continue to be identified as the catalyst for broader educational reform.

In order to achieve these twin objectives within the limits of available resources, NCIES has stressed several strategies for effecting change. NCIES programs have sought to achieve a multiplier effect by training the "gatekeepers"—those who will teach the teachers. Also, in an effort to secure greater continuity of efforts, most projects are supported on a multiyear basis.

OTHER OE EFFORTS

The Bureau of Education for the Handicapped (BEH) within the Office of Education administers programs for the development of specialists in special education. (Training of regular classroom teachers in methods of teaching the handicapped is administered by the Special Education program of the National Center for the Improvement of Educational Systems.) At the present time the field of special education is undergoing rapid and significant change. Improved diagnostic procedures, an increased stress on early identification of handicapping conditions, greater precision in defining the nature of the handicaps involved—all of these factors have enormously increased the number of children identified as "handicapped." At the same time, State and local education agencies have provided increased resources for the handicapped child. (Trends in special education will be the subject of a forthcoming part of this report.) These trends have called for new efforts on the Federal level.

During the past year, the Education of the Handicapped Act brought together all legislative authorities for the education of handicapped children. The passage of this act capped a decade of expansion for Federal programs in this area. During the past 10 years—

Federal funding has increased from $1 million in fiscal year 1960 to $32.6 million in fiscal year 1971;

Universities training special education personnel have increased from 70 to over 400; those receiving Federal aid have increased from 16 to more than 300;

The number of individuals receiving support has increased from 177 to more than 20,000;

Inservice training programs have expanded along with preservice efforts. BEH studies reveal a trend on the part of State education agencies away from the support of master's level programs toward increased inservice summer and special study traineeships.

Organized during fiscal year 1971, the Bureau of Libraries and Educational Technology (BLET) administers Office of Education programs designed to support the improvement of educational media and technological aids to learning. In order to improve the quality of training for librarians, the bureau conducts a number of institutes in librarianship at selected colleges and universities, and also awards fellowships for graduate-level training. Training for media specialists has also received major attention from the bureau.

The purpose of the Media Specialist program, administered by the Bureau of Libraries and Educational Technology during fiscal year 1971, is twofold: to increase the pool of specialized personnel qualified to assist and support teachers and administrators in the effective use of available instructional material and to design more effective instructional media; and also to develop, install, and utilize newly validated innovative products, practices, and processes.

Since 1969, the program has attempted to reach these objectives through both long-term and short-term projects. The long-term efforts have focused on the internship and multiplier concepts, while the short-term projects have directed their attention to specialized problems within a locality or State.

During the 1969-70 funding period, 1,139 teachers, administrators, supervisors, and paraprofessionals were trained in 15 projects across the country. Followup investigation and final project reports indicate that more than half of these professionals and paraprofessionals were employed by school systems. In 1970-71, the scope of the program increased, with 3,357 participants and 16 projects. Emphasis during this shifted to long-term projects, with only a few shorter term problem-oriented projects remaining.

In addition to programs for the development of elementary- and secondary-level educational personnel, the Office of Education has two major programs aimed at improving college-level teaching. These programs are authorized by part E of the Education Professions Development Act and title IV of the National Defense Education Act (NDEA).

The provisions of part E of the EPDA were intended to "improve the quality of teaching and to help meet critical shortages of adequately trained personnel" in institutions of higher education. Although this part of the act is broad enough to support improvement of higher education at all levels, a primary purpose of the legislation was to strengthen 2-year colleges. Within the Bureau of Higher Education, part E of the act has been administered by the Division of University Programs (formerly called the Division of Graduate Programs), which is responsible for the fellowship programs and special projects. A number of broad national priorities were established for the part E program when it was first set up in the spring of 1968. These priorities, which have been reflected in the guidelines, have remained unchanged throughout fiscal years 1969, 1970, and 1971, and provide for the support of:

1. Programs to train teachers, administrators, or educational specialists to serve in 2-year colleges.
2. Programs to prepare educational personnel who are concerned with the needs of minority and low-income college students from educationally deprived backgrounds.
3. Programs to train educational personnel to serve in developing institutions.
4. Programs to train administrators in higher education with important decisionmaking responsibilities for long-range and short-range planning.
5. Programs to improve undergraduate teaching.
6. Programs to train educational specialists.

Because the appropriations for part E for fiscal years 1969, 1970, and 1971 have been limited ($6.9 million, $10 million, and $10 million, respectively), an effort was made to concentrate funds on the most crucial of the aforementioned national priorities in order to make a significant impact. Consequently, although priorities 4, 5, and 6 have not been neglected, most of the funds have been allo-

cated to the first three priorities—2-year colleges, low-income and minority students, and developing institutions. There is a pressing need for training higher educational personnel in these three priority areas. The rapid expansion of enrollments in the 2-year colleges has resulted in a need for additional teachers who are well prepared in the philosophy behind and requirements for junior college teaching. There is also a great need for inservice training to upgrade the skills of personnel currently serving in the 2-year colleges. Also the need continues for training personnel for developing institutions, particularly the black colleges, in order to overcome their isolation from the mainstream of academic life. Colleges and universities throughout the country are attempting to provide increased higher education opportunities for minority and low-income youth who previously have been excluded from full participation in the benefits of our society. Accordingly, part E is helping to train college teachers, administrators, and educational specialists to serve these students.

Owing to financial necessity and the need to avoid overlapping efforts, certain other objectives have been entirely excluded from the part E program. First, it was decided that programs to train higher education personnel in the fields of elementary or secondary education should be supported under parts C and D of the EPDA rather than part E. Second, part E has not supported training programs for higher education personnel in postsecondary occupational or vocational programs at the junior-college or technical-institute level. Instead, this area of training is covered under part F of the EPDA, which is administered by NCIES. Third, training programs in science or foreign language and area studies which are eligible for support from the National Science Foundation, title VI of the National Defense Education Act, or the Fulbright-Hays Act are not supported under part E.

The following is a summary of the amount of training support provided under part E in its first 3 years of operation as well as projected levels of support for fiscal year 1972:

	FY 1969	*FY 1970*	*FY 1971*	*FY 1972 (projected)*
Total appropriation	$6.9 million	$10 million	$10 million	$10 million
Funds allocated for fellowship programs	$2.2 million	$5 million	$5 million	$5 million
No. fellowship programs	51	77		80
No. fellowships	408	902		900
Funds allocated for institutes, short-term training programs, and special projects	$4.7 million	$5 million	$5 million	$5 million
No. of institutes, short-term training programs, and special projects	78	93	94	95
No. persons trained in institutes, short-term training programs, and special projects	4,610	5,312	6,800	7,000

1. *The 2-year Colleges:* A large portion of the fellowship programs supported under part E in fiscal years 1969, 1970, and 1971 provided training for teachers, administrators, and educational specialists serving or preparing to serve in 2-year colleges. During the first 3 years of the program, 1,470 1- and 2-year fellowships were awarded to 102 programs at 87 institutions of higher education. Approximately 70 percent of these fellowships were awarded to prepare educational personnel for junior and community colleges.

The part E institutes, short-term training programs, and special projects were focused to a large extent during these fiscal years on the needs of junior colleges. In fiscal year 1969,

about 38 percent of the funds allocated for support of institutes, short-term training programs, and special projects supported training programs designed specifically for 2-year college personnel. In fiscal year 1970, this percentage increased to 50 percent. Twenty-two grants awarded in that year were made directly to 2-year institutions. In fiscal year 1971, about 50 percent of the funds allocated to institute-type projects supported the training of junior college personnel.

These training programs provide a variety of approaches to meeting the needs of junior college personnel, including preservice training for teachers and counselors which includes practicum experience in a junior college, training teams of junior college administrators, training personnel of statewide 2-year college systems for maximum impact on the total system, and orienting new teachers to the philosophy and special problems of the open-door community college with its great variety of students.

2. *Low-Income and Minority Students:* Part E fellowship programs have sought to be innovative in providing preservice training for college personnel to equip them to serve the special needs of minority and low-income students in higher education. In the first 3 years of the part E program, approximately 35 percent of the total number of fellowships awarded were designed to prepare higher education personnel to work with low-income and minority students.

The part E institutes, short-term training programs, and special projects also focus to a large extent on the needs of these students. In fiscal year 1969, about 40 percent of the funds allocated for support of these types of training programs provided training to prepare college personnel to work with low-income youth. In fiscal year 1970, this percentage increased to 65 percent, and in fiscal year 1971 the proportion was about 71 percent. Thus, there has been a continuous increase in the amount of attention given to low-income students under part E.

3. *Developing Institutions:* The fellowship, institutes, and short-term training programs and special projects under part E are providing training to meet the needs of developing institutions, including both black colleges and the small, 4-year predominantly white college. An example of an innovative fellowship program to train teachers for black colleges is being coordinated by Atlanta University. In this project students combine traditional graduate study toward a master's degree in an academic field with a practicum of designing and teaching an innovative curriculum for low-income black freshman students. The levels of support under the part E institute program for training personnel for developing institutions has been as follows: In fiscal year 1969, 32 percent of the total $5 million was allocated for institutes, short-term training programs, and special projects; in fiscal year 1970, 34 percent of this amount; and in fiscal year 1971, about 45 percent. These programs are training a variety of personnel for developing institutions, including business officers, student financial aid officers, trustees, teachers, counselors, and academic deans. They enable these people to increase their skills and their knowledge of their subject field, as well as to expand into new curricular areas such as black studies.

4. *Other Areas of Concern:* The EPDA part E program has addressed itself, on a limited scale, to other areas of critical need in higher education. In fiscal year 1970, a small amount of support was given for training college personnel in environmental education. There has also been an effort to deal with such immediate problems as drug abuse and the needs of returning Vietnam veterans. Some programs are being funded, in both fiscal year 1971 and fiscal year 1972, to train higher education personnel to deal with drugs on campus and to provide guidance to returned veterans.

In pursuit of new approaches to training educational personnel, the part E fellowship program has supported training projects which: 1) draw upon the total resources of the college or university—the graduate school, the college of education, and other relevant professional schools; 2) involve cooperative relationships between and among institutions of higher education, especially between 4-year colleges and universities and 2-year junior and community colleges; 3) encourage cooperation between colleges and universities with the community, especially in the preparation of personnel to work with the disadvantaged; and 4) include significant supervised

teaching or administrative internships in institutions of higher education.

The other major OE program aimed at improving college-level teaching is supported under title IV of the NDEA. In 1958, when the NDEA became law, there was a widespread conviction that the number of doctoral graduates available for college and university teaching was inadequate and would become increasingly so in future years. Title IV, the doctoral fellowship program, was designed to remedy this deficiency, first by assisting graduating students in speedily completing their doctoral programs, and, secondly, by assisting institutions in establishing new programs and in expanding existing doctoral programs. An institutional allowance accompanying each fellowship was intended to help institutions defray the costs of the new or expanded programs.

In the early years of the program, preference in the award of fellowships was given to students intending to become college teachers. With the exception of theology, all academic fields were considered eligible for approval. In practice a preference was given to those fields regarded as central to undergraduate study. A national advisory committee assisted in the appraisal of program applications and in the development of appropriate policies and procedures.

In 1964, Congress reviewed and amended the program. An interest in college teaching was made a requirement for fellowship holders. The institutional allowance was fixed at a uniform $2,500 per year. And, most importantly, the authorized number of fellowships was increased from 1,500 to 3,000 in 1965, to 6,000 in 1966, and to 7,500 in subsequent years. Appropriations, however, were insufficient to support these numbers of fellowships. Since 1967, appropriations have decreased each year, so that beginning in the fall of 1971, only 2,100 new fellowships were awarded. In 1972 no money was requested or new fellowships, although second- and third-year awards would be continued for students already holding first-year awards. The program has thus substantially remedied those inadequacies to which it was addressed.

Data have recently become available on the doctoral attainment and subsequent employment of the first five classes of title IV fellows. These data show that out of a total of about 7,000 fellows, 3,264 had completed their degrees by June 30, 1970. This includes over 50 percent of the class of 1960, and somewhat smaller numbers for later classes. Of course these figures will increase with the passage of time. It must be remembered that for a majority of doctoral candidates it takes 5 or more years to complete requirements for the degree, particularly when, as in the case of title IV, institutions are encouraged to provide teaching experience for their fellows during their fellowship tenure. Of those who earned their degrees, approximately 67 percent found employment in higher education; nearly 12 percent were employed in business or industry; and nearly 6 percent took jobs in American government. The number not finding jobs of any kind was one-half of 1 percent. The primary work activity of those employed in higher education was as follows: 52 percent were teaching; 25 percent were involved in research and development; 6 percent had postdoctoral fellowships; and 16 percent were in administration, professional services, or other miscellaneous activities.

In the light of new labor market conditions, which seem to indicate that the need for research Ph.D.'s in traditional fields is no longer as urgent as it once was, consideration is now being given to broadening the purpose and mission of the title IV program. Approval has already been given for a number of doctor of arts programs to train undergraduate teachers for community colleges and 4-year institutions. There are emerging new needs in such areas as environmental studies and in work with minority groups. Special encouragement is needed for prospective graduate students from among the disadvantaged. Moreover, in our increasingly technological society there will be no diminution in the need for highly trained professionals in traditional academic fields. The title IV program can easily be adapted to these and other newly emerging areas of critical national need.

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